Digitized by the Internet Archive
in 2015

https://archive.org/details/researchbulletinunse_3

✓ In BOOK

Information Services Industry Programme—Europe (IEMAP)
Executive Research Bulletins

CONTENTS

Vol.	No.	Title
I.	1.	Processing Services Markets ✓
I.	2.	Application Integration ✓NOT IN BOOK
I.	3.	Financial Deregulation Creates Major New Opportunities for European Software and Services Vendors ✓
I.	4.	European Software and Services Market, 1990-1995—Insurance Sector ✓
I.	5.	Market Analysis and Forecast for Western Europe Distribution Industry Sector ✓
I.	6.	Software Product Specialisation in Discrete Manufacturing Drives Collaborative Ventures
I.	7.	Preliminary Market Forecast for Western European Discrete Manufacturing Sector ✓
I.	8.	The Five Stages Of Information System Development in Distribution Companies ✓
I.	9.	Revised Market Structure for 1990 ✓
II.	1.	Preliminary Market Forecast for Western European Process Manufacturing Sector ✓
II.	2.	New Opportunities in Western European Process Manufacturing Sector ✓
II.	3.	Integration of Supervisory Control and Production Management Systems Now Imminent in the Process Manufacutirng Sector ✓
II.	4.	European Professional Services—Market Trends ✓
II.	5.	European Professional Services Market Forecast ✓
II.	6.	Consulting and Account Management are the Keys to the CIM Market ✓
II.	7.	UNIX Software and Services—European Market Issues ✓
II.	8.	Impact of UNIX on Software and Service Vendors ✓
II.	9.	UNIX System Software Products European Market Forecast ✓
II.	10.	Software Support and Maintenance—Western European Market ✓
II.	11.	Daimler-Benz Sogeti Alliance Raises Stakes for Global Leadership in Information Services ✓
II.	12.	Third-Party Software Support and Maintenance—User Profiles ✓
II.	13.	CA90s and ENTIRE—New Systems Software Architectures ✓
II.	14.	CAP GEMINI Selects Insurance for Growth ✓

(IEMAP) Executive Research Bulletins (cont.)

Vol.	No.	Title
II.	15.	IBM's IAA Fosters Mix and Match Insurance Solutions
II.	16.	The Role of Application Software Products in the Banking Industry
III.	1.	Eastern Europe—INPUT Raises Its Growth Rate Forecast
III.	2.	Leading Vendors Grow Despite Recession in Europe
III.	3.	Dollar Exchange Rate Hides Low European Revenue Growth
III.	4.	Software Maintenance Benefits from CASE
III.	5.	Management Consultancies Deliver IT to the Bottom Line
III.	6.	Healthy Growth for CASE in Europe
III.	7.	Software and Services Market Shares—Competition Increases

May 1990
MAPE Vol. I, No. 1
Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

Processing Services Markets

Processing in the 1990s

In the early 1980s, the processing services sector accounted for nearly 50% of the computer services industry. However, since then, the advent of lower-cost equipment and the proliferation of software and professional services has led to rapid growth of other delivery modes; this resulted in the processing sector falling to only 15% of the total Western European computer software and services market in 1989.

INPUT research indicates that despite the availability of more software on faster and cheaper hardware platforms, there are significant opportunities in processing, and this relative decline is slowing. Some processing companies have continued to thrive throughout the last ten years, and many companies will continue to maintain profitable processing businesses with healthy growth rates into the 1990s.

The purpose of this research summary is to identify key trends and driving forces that are creating new growth for processing services.

Exhibit 1

End-User Trends for Processing

- IS decentralisation
- Need for fast solutions
- External supply
- Networking

The Challenges Facing End Users

Exhibit 1 lists the most important trends in the end-user market that are driving the computer software and services market. These factors are recognised as reasons for the emergence of systems integration and the re-emergence of facilities management as significant opportunities, but they are equally significant as drivers of the processing services market.

The decentralisation of the in-house IS (information systems) department means that many managers are having to come to terms with making IS decisions that were formerly centralised; decentralisation also creates significant pressures for proper strategy planning and coordination.

At the same time, for many defined problems or applications, there is a need for fast solutions to take the pressure off of critical development projects. Contracting the development and operation of IS systems is becoming an effective solution for many companies. The combination of readily available software and processing facilities can make a processing services solution a very effective and fast response to specific problems.

Within the overall business environment, there exists a general trend towards external supply of services and product components, as complexity breeds the necessity for specialisation. The increasing proportion of bought-in job assemblies within automobile manufacturing is a good example. This trend implies an increasing tendency to contract externally for information services previously carried out in-house.

Many companies are aware of the availability of networking technology and also of their lack of technical capability to take advantage of this technology. The use of an external supplier that has already invested in a networking infrastructure is an attractive alternative to an in-house network design project using outside consultants.

Exhibit 2

End-User Environment Sophistication

- Software experience
- Telecommunications experience
- Basic understanding of technology
- Greater autonomy

The Changes to the Client Base

Compared to the batch processing and timesharing services of ten years ago, a number of significant changes have taken place that will affect the provision of processing services. These changes are summarised in Exhibit 2.

Most end users now have some direct experience of using computer software, either via a personal computer or via an in-house teleprocessing service. Many of these users will have experienced software of high quality, with few bugs, with graphical interfaces, colour and quality documentation.

Many users have personal computers with communications ability that they wish to link to a processing application, or they wish to integrate a processing application into other business systems. Most users now have a basic understanding of technology and a direct experience of fax, modems, word processing etc.

In general, individual departments now have greater autonomy than in the past, and greater freedom to exercise responsibility and seek outside solutions.

In a word, the end-user base is becoming much more sophisticated.

Exhibit 3

Critical Success Factors—Processing Services

- Detailed knowledge of application
- Understand client business
- Ownership of software
- Processing element
- Service improvement
- Integrate application

The Keys to Success in Processing

Many companies that were originally in the bureau business experienced significant trauma as their client base eroded in the face of competition from software on minicomputers and microcomputers, and as a result of improvement in the quality of in-house operating systems. However, many companies have successfully weathered this storm, principally because they were specialists operating within a specific market niche. Opportunities still exist, and it is possible to identify the factors that have made these companies successful.

One of the most significant features of successful processing services businesses is a detailed knowledge of the application and how it fits into the client's business. In many cases, companies providing the service understand the business better than the client. This and other key factors for success are shown in Exhibit 3.

It is critically important for the provider of the service to be the owner and developer of the application software so that it can be adapted.

A high percentage of processing within a business provides profitability, since this is where the margins are greatest.

It is important to continually improve the service by adding features, so that it is not vulnerable to price competition.

It is important to provide the flexibility to integrate the application into other parts of the clients' business systems.

These and other factors will be analysed in more detail in the processing services report currently being prepared by INPUT. ■

This Research Bulletin is issued as part of INPUT's Market Analysis Programme—Europe. The information for this bulletin was extracted from a soon-to-be-released report, *Processing Services Markets*.

If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

June 1990
MAPE Vol. I, No. 3

Route to:

INPUT LIBRARY

INPUT®
Research
Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Financial Deregulation Creates Major New Opportunities for European Software and Services Vendors

The plan by the European Commission to deregulate financial markets by the 1st of January 1993 is sending shock waves through all the financial markets of Western Europe, not just those of the 12 member states of the EEC. As a result, banking and finance institutions are being forced to restructure, and at the same time develop new competitive products and services. They are looking increasingly to software and services vendors to assist them in developing the complex international systems needed for the 1990s. INPUT forecasts that the banking and finance sector of the European software and services market will reach $11 billion by 1990, and will achieve a growth of 20% per annum on average over the next five years.

The banking and finance sector represents some 20% of the total West European software and services market, second in importance only to the manufacturing sector. It is dominated by a small number of key vendors; some 80 vendors control around 70% of the total end-user revenues. Many of these vendors today are traditional European-owned independents focused on a specific European country market. As banks, savings and other financial institutions expand out of their traditionally protected national market niches in the 1990s, major new opportunities are evolving. Not only are these being driven by the demand for new national customer service systems, but also increasingly for pan-European systems. As a result, the European banking and finance market is being targeted by the major international independent and equipment vendors.

Exhibit 1

Research Bulletin Content

- Overview of software and services market for banking and finance
- Securities market
- Banking market
- Challenges and recommendations

A new report, soon to be published by INPUT, entitled *European Software and Services Market, 1990-1995, Banking and Finance Sector,* analyses the key trends, developments and leading vendors in the European banking and finance market over the next few years. It covers both the banking and securities market; its content is summarised in Exhibit 1.

Three key opportunity areas for software and services vendors have been identified:

- the development of and growing competition between electronic stock exchanges around Europe
- the redesign of the prime databases of banks to meet the increasingly competitive environment after 1992
- the demand by banks to be able to deliver new products and services to their customers through new terminal systems to gain competitive advantage

A massive restructuring of the European banking and finance markets is evident today with major national and international mergers and acquisitions being regularly reported between banks and other financial institutions. As a result, the number of financial institutions within Europe is declining, their size is increasing, and they are becoming more pan-European.

For software and services vendors, this changing market-place means new opportunities to assist financial institutions to restructure and adjust. INPUT sees that there will be strong demand for professional services in the banking and finance market, such as IT consultancy (advising clients on CASE tools, 4GLs, fault-tolerant processing, security, and networking), project management services (assisting IT managers in ensuring that key projects are delivered on time), or custom software development services (new customer service systems).

In other areas of the market there are opportunities for software products, notably in the securities markets and in small-to-medium-sized banks, and in certain specialised areas of banking, such as foreign exchange, EFTPoS, and EDI.

The 1990s offer software and services vendors many challenges and opportunities. In INPUT's opinion, to be successful it is essential for vendors to target specific market niches and position themselves quickly in these areas. Vendors that are successful in defining their strategy will find this market sector very lucrative over the next few years. However, once the major realignment of the European banking and finance markets has been completed (by the mid-1990s), there is a real danger of an oversupply in software and services that could seriously affect vendors who have not managed to clearly establish themselves in key niches.

Exhibit 2

Key Vendor Opportunities

- The electronic stock exchange
- Redesign of back-office banking systems
- New customer terminal systems

In INPUT's opinion, one of the most exciting market sectors for software and services vendors in Western Europe will be banking and finance.

INPUT has interviewed vendors and users around Europe to identify the key trends and issues in the banking and finance market. Many niche opportunities can be recognized, but three stand out as offering software and services vendors major opportunities in the first half of the 1990s.

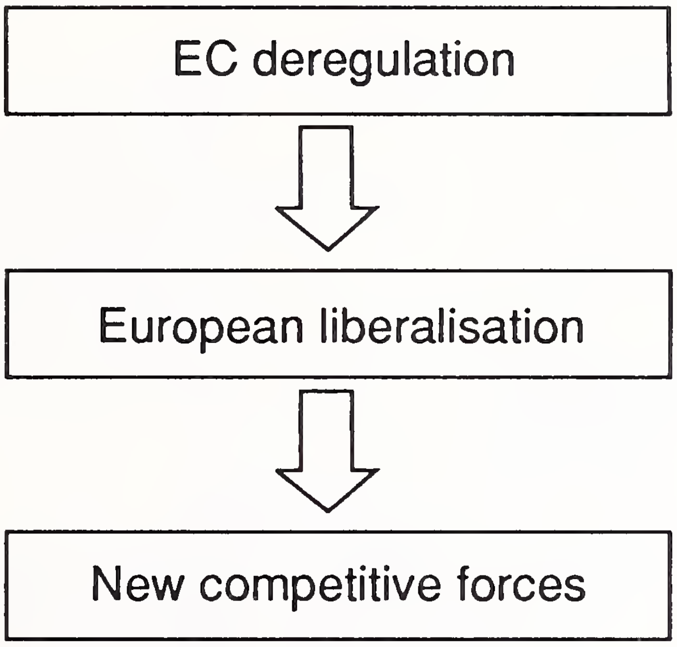
Exhibit 2 lists the three major opportunities. Throughout Europe, all the major securities markets are introducing or upgrading electronic systems so as to offer full "electronic stock exchanges" to security houses. Through these developments, individual stock exchanges are identifying specific areas of the European securities market to target, and are attempting to offer the most competitive electronic infrastructure in these areas. INPUT sees that these developments will offer major opportunities to software and services vendors.

In the area of banking, the prime databases of nearly all banks throughout Europe are based on account number records, rather than customer name records. There are growing competitive demands on banks to offer more sophisticated and targeted services to customers. To do this, banks have to identify more with individual customers; this they can do only by redesigning their prime databases. Redesign is by no means a trivial task as these developments must be undertaken at the same time that new services are also being offered to the banks' customers.

The redesign of back-office banking systems to accommodate these new customer-orientated databases and the development of customer terminal systems through which banks can deliver new, competitive services will offer vendors many additional opportunities in the 1990s.

Exhibit 3

The Winds of Change



The key driving force behind this restructuring of the financial markets of Europe is the Single European Act legislation of the European Commission, as illustrated in Exhibit 3. It is planned that all EEC financial markets will deregulated by 1st January, 1993. As a result, any EEC financial institution will be free to offer its services in any other member state and to be able to extend its range of services beyond those defined by traditional national legislation.

The effect of this liberalisation is not just affecting the EEC, but also financial institutions through Western Europe. As a result, new competitive forces are reshaping the entire Western European banking and finance market.

Many financial institutions have already merged nationally as a direct result of these forces. INPUT sees that this process will continue into the 1990s, accompanied by a growing number of acquisitions between institutions of different European origin.

Denmark is an example. Already in early 1990, the six largest banks have merged into two new larger groups, sending shock waves throughout the Danish market. In addition, the Danish government has invested in a new electronic stock exchange in Copenhagen with the intention of becoming the focal point for Nordic securities trading and the gateway for other Nordic countries into EEC financial markets.

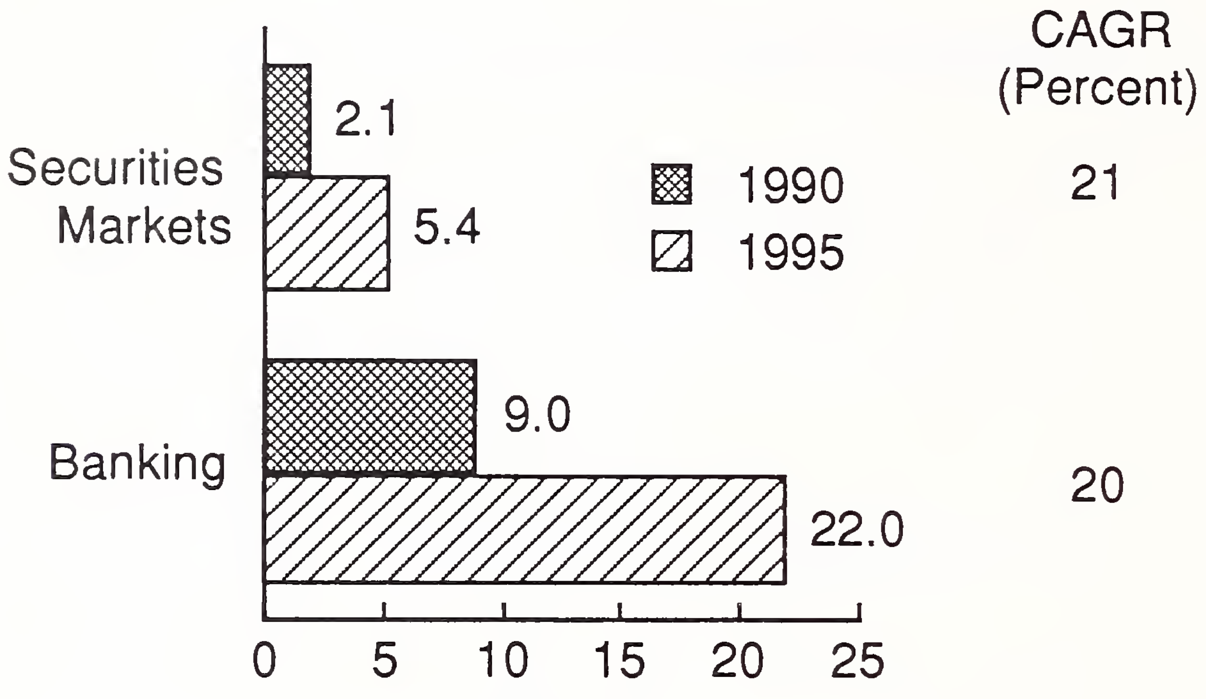
Similarly, in the Netherlands major changes have occurred this year. In March, the ABN and the Amro bank announced that they will merge to become Europe's sixth largest bank.

As a result of these changes, the number of financial institutions in Western Europe will decline and the size and importance of individual institutions will grow. Mergers and acquisitions will mean that incompatible systems will have to be rationalised—at the same time that IS managers are trying to redesign them to meet the new demands of the 1990s.

These trends will be extremely important to the software and services industry. The types of services and products traditionally delivered to the banking and finance community may well have to be changed—perhaps radically—in the 1990s. Vendors who foresee these changes will be best positioned to benefit from potential opportunities in the 1990s.

Exhibit 4

Software and Services, 1990-1995



$ Billions

Total Market 1990 = $11.1 billion

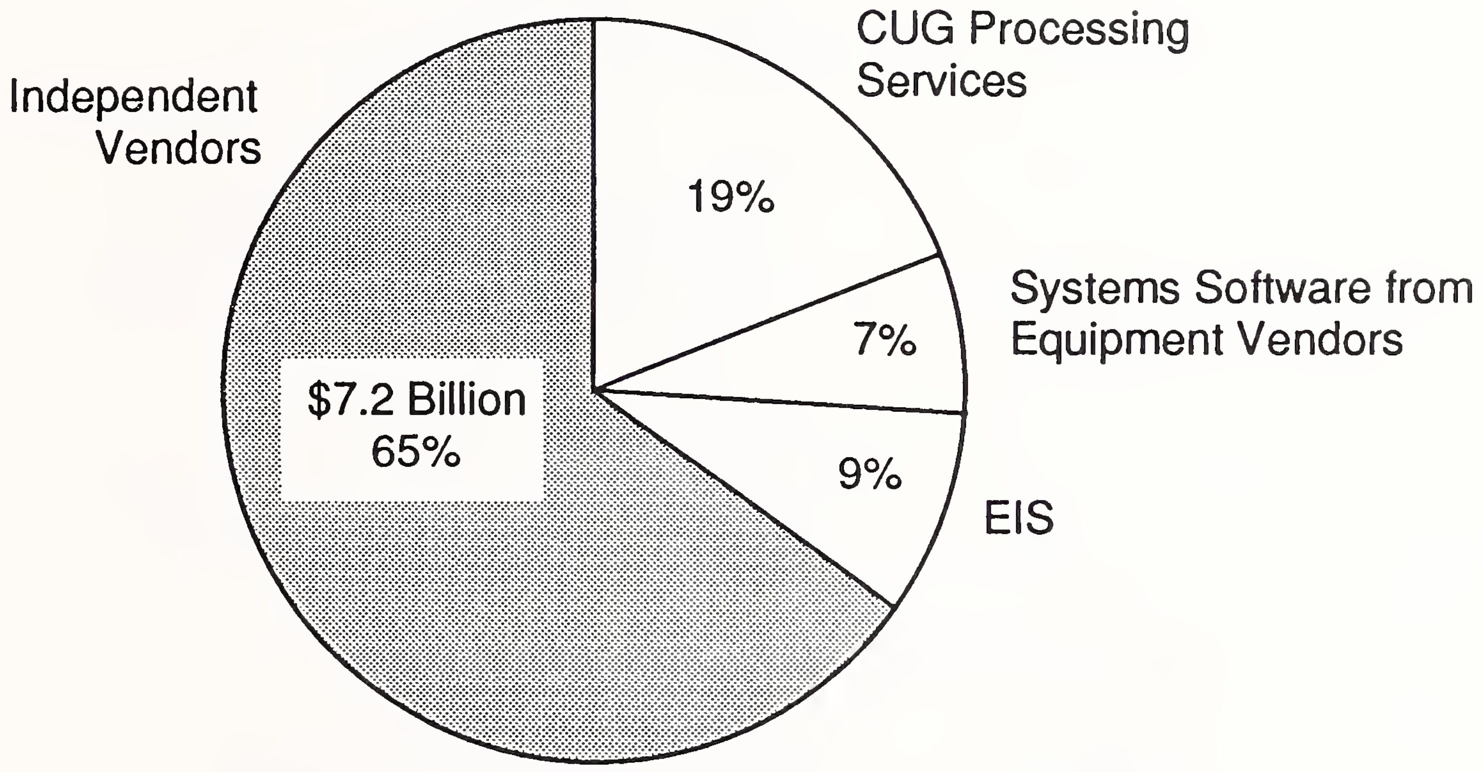
The banking and finance sector represents just under 20% of the total Western European software and services market. INPUT estimates that in 1990, the total value of this market will be some $11 billion, as illustrated in Exhibit 4.

INPUT estimates that the banking and finance market is second only to the manufacturing sector in size and importance. However, unlike the manufacturing sector, the banking and finance market is dominated by a small number of very large vendors. INPUT estimates that only some 2,500 vendors are involved in this market and that some 3%, or around 80, control over 70% of total end-user revenues.

One of the prime reasons for this structure is the nature of the banking and finance market itself. Banks make their information services decisions centrally, thus creating an ideal market for large vendors to serve them. In addition, there are a limited number of large market sectors, covered by a very few major vendors, in what can be described as semi-closed markets.

Exhibit 5

Competitive Opportunities



Total Market 1990 = $11.1 Billion

Exhibit 5 indicates the relative size of these semi-closed market sectors. Around 20% of the total banking and finance market is accounted for by closed user group (CUG) processing services. These are vendors owned by groups of banks. They are all minority shareholders and are generally savings or cooperative banks. These vendors supply the total information services needs of these banks, mostly through centralised processing services. West Germany has some 19 of these vendors, Italy five, Scandinavia three and Switzerland one.

In addition, about 7% of the total market consists of system software supplied by equipment vendors, notably IBM. INPUT estimates that between 60% and 65% of West European banking back-office equipment is IBM's, and that IBM also has a very strong presence in front-office systems. As a result, IBM is the largest vendor in the European banking and finance market, controlling some 11% of total revenues.

The third sector controlled by a small number of large vendors is that of electronic information services to the securities market. Vendors such as Reuters, Telerate, Quotron and Telekurs act as electronic publishers, delivering their information as digital feeds to the electronic trading desks of market makers in the new electronic stock exchanges and to traditional exchange floors.

As a result of these three semi-closed sectors, around a third of the total banking and finance market is controlled by less than 40 vendors. This leaves the remaining two-thirds of the market open for independent vendors.

Exhibit 6

Phased Developments of Electronic Stock Exchanges

London	- Dealing 1986 (SEAQ) - Settlement 1992 (TAURUS)
Paris	- Dealing in major shares 1987 - Settlement for major shares 1987 - Full development 1991
Frankfurt	- Dealing 1991 - Settlement for major shares 1970
Copenhagen	- Dealing/settlement 1988
Madrid	- Dealing/settlement for major shares 1989
Brussels	- Dealing/settlement for major shares 1989

Exhibit 6 shows some of the major developments in electronic stock exchanges around Europe. Different exchanges are at very different phases of development. London introduced electronic dealing in 1986 with "Big Bang", but has yet to launch its electronic share registry system Taurus, which is not planned until 1992. Frankfurt has had electronic settlement since 1970, but only plans to introduce electronic dealing in early 1991. Paris plans to introduce its full electronic settlement system, RELIT, beginning in March 1990.

The opportunities for software and services vendors in Europe vary significantly from exchange to exchange, and will continue to do so for many years. Deregulation is forcing individual exchanges to specialise in specific financial instruments—London international equities, Frankfurt bonds, Copenhagen Nordic trading, and so on. This local specialisation will create further opportunities for software and service vendors as securities houses will not be able to rely on just their local exchange for the best service, but will be forced to link in to a range of European exchanges.

Specialisation of European exchanges means that the software and services industry must be prepared to provide integration and networking skills to European securities houses in the 1990s, and often pan-European skills.

Exhibit 7

Western European Equities and Bonds—Trading Volumes, 1989

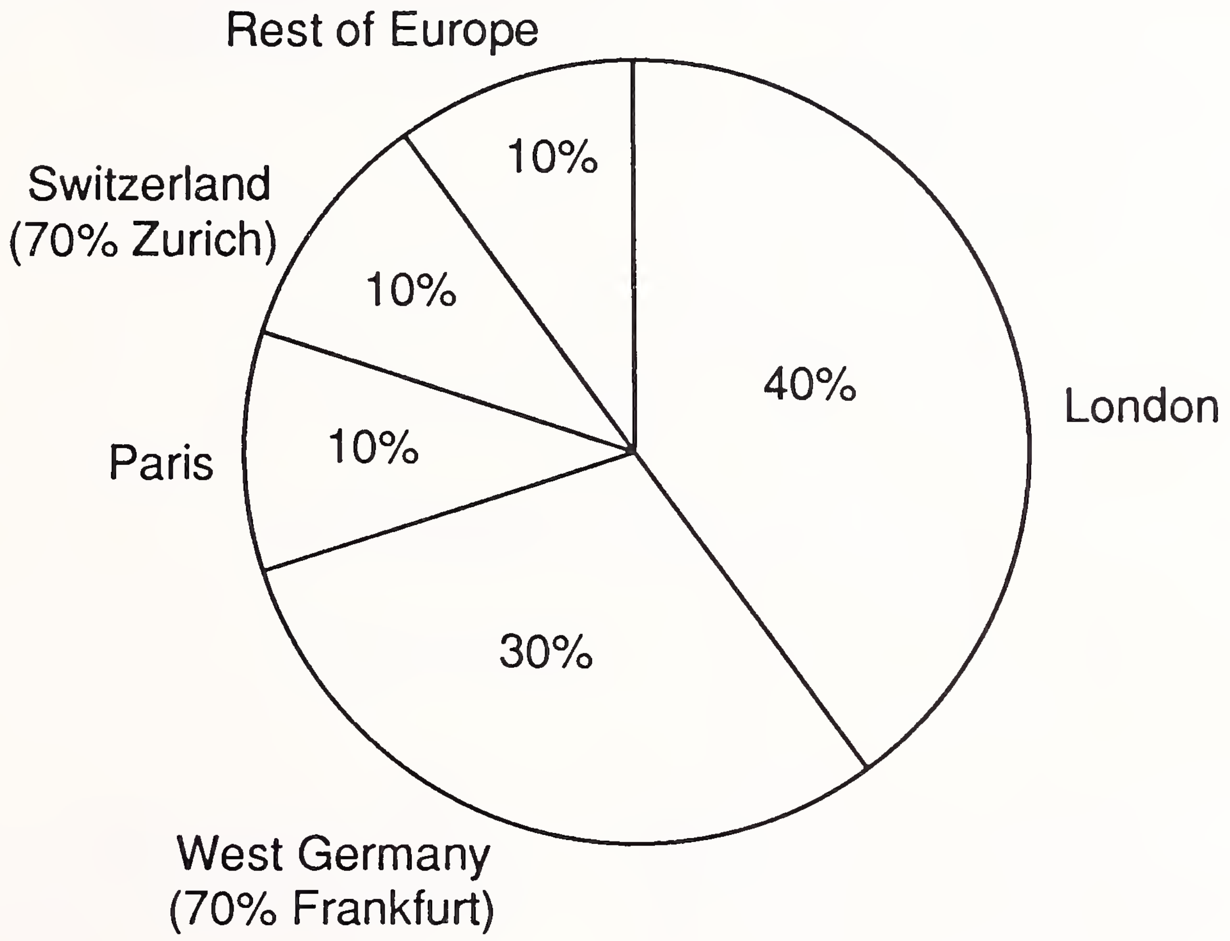


Exhibit 7 shows the breakdown of the trading volume in securities throughout the different West European markets in 1989.

Currently, London is by far the largest market, accounting for some 40% of total trading, and dominates international trading. The next largest market is Frankfurt, accounting for some 70% of the total West German trading volume and 20% of the overall West European market. Paris accounts for some 10% of the total West European market.

Exchanges like Paris and Copenhagen are growing rapidly, and seek to capture volume from other markets through the most advanced electronic systems.

As these different stock exchanges introduce and improve their electronic systems, they are in turn forcing their competitors to re-evaluate and improve their existing electronic systems. In addition, there are now moves to link these traditionally separate exchanges by a pan-European electronic information system—such as PIPE—for international equity information and a potential dealing system.

As each of these local or international electronic developments are phased in, securities houses are forced to update their internal electronic trading and settlement systems. Generally, they look to external vendors to manage, install and support these systems, offering considerable opportunities to software and services vendors.

However, overriding these development trends is the overall health of the global securities market. Securities are by their very nature risky, and directly reflect the state of the global business cycle. For the past 2 to 3 years, the business cycle has been on a downturn, reflected by minimal growth in the value and volume of securities trading. In London, the first market to introduce electronic market making, volumes were slashed by one-third in October 1987, on "Black Monday."

After static growth for the past 2 to 3 years, there are now signs of a resurgence of investment in London systems. Added to the developments in other European exchanges, the prospects of a healthy software and services market for European securities houses looks very promising for the first half of the 1990s.

Exhibit 8

Vendor Profile—NMW

- Back-office processing service
- One-third loss with the "Big Crash"
- New Strategy
  - Existing processing services
  - DRS "Fortress"
  - Packaged solution "Equity"
  - Exports

NMW was one of the fastest growing software and services vendors in the U.K. securities market in the mid-1980s. As Exhibit 8 illustrates, it developed traditional back-office processing services for small to medium-sized securities houses with revenues in 1986 of £14 million.

NMW geared up for Big Bang with three new ICL mainframes at two sites, plus its own X.25 network to the U.K., Ireland and the Channel Isles with international gateways. It coped well with the exceptionally high volume of trading that occurred immediately after Big Bang, increasing its annual revenues substantially to nearly £20 million by mid-1987.

In October 1987, the Big Crash came. NMW saw its customers' trading volumes and its revenues slashed to £10 million for 1988.

The management of NMW made some harsh decisions in 1988 and 1989. Staff was cut by one-third, and a completely new strategy evolved. There was still demand for NMW's traditional processing services, albeit at a far lower level. To utilise the spare processing capacity left after the Big Crash, NMW moved into disaster recovery services with its new "Fortress" service, not limiting itself to the London securities market.

In addition, the company looked for new areas of development. By looking at what had happened when Wall Street went electronic, NMW had foreseen that it was very likely that it would be the big banks that would buy up securities houses. It also saw that the market would look more to standard packaged solutions, especially with the new lower trading volumes. It therefore developed "Equity," a packaged solution for securities houses, with Winterflood Securities.

Seeing that the banks would remain major players in European securities trading markets, and with IBM dominating the banking market, NMW chose an IBM equipment platform for this new product. System/88 is the Stratus fault-tolerant minicomputer relabelled by IBM. Some 30% of Stratus's sales worldwide are made by IBM. Having launched Equity in early 1990, NMW now sees new export markets opening up for it.

In addition, NMW used its networking experience to offer integration services based on its X.25 network and DEC capabilities to manage LANs in customer sites. By 1989, after two very hard years, NMW had again become profitable, with revenues of some £9 million.

Exhibit 9

NMW Experience

- Processing opportunities
- Packaged software products solutions
- Joint venture development
- Network and integration skills
- Export opportunities

Exhibit 9 summarises the key elements of the NMW experience over the past few years:

- even though the London market decreased sharply in trading volume, there are still processing service opportunities
- the collapse of many bank acquisitions in the London securities market has released the golden handcuffs on the old U.K. partners, and this may well lead to new small securities firms being re-established, which will seek to minimise their risks through external processing services
- there are considerable opportunities in the securities market for software product sales of packaged solutions
- there is considerable commercial merit in developing new products jointly with market parties, to ensure that the best functionality is built into the new development
- successful vendors in the electronic stock exchange must have network and integration skills
- experience built up in one electronic stock exchange can be exported to others—not only in Europe, but in other global financial centres

Exhibit 10

Opportunity Areas—Securities Markets

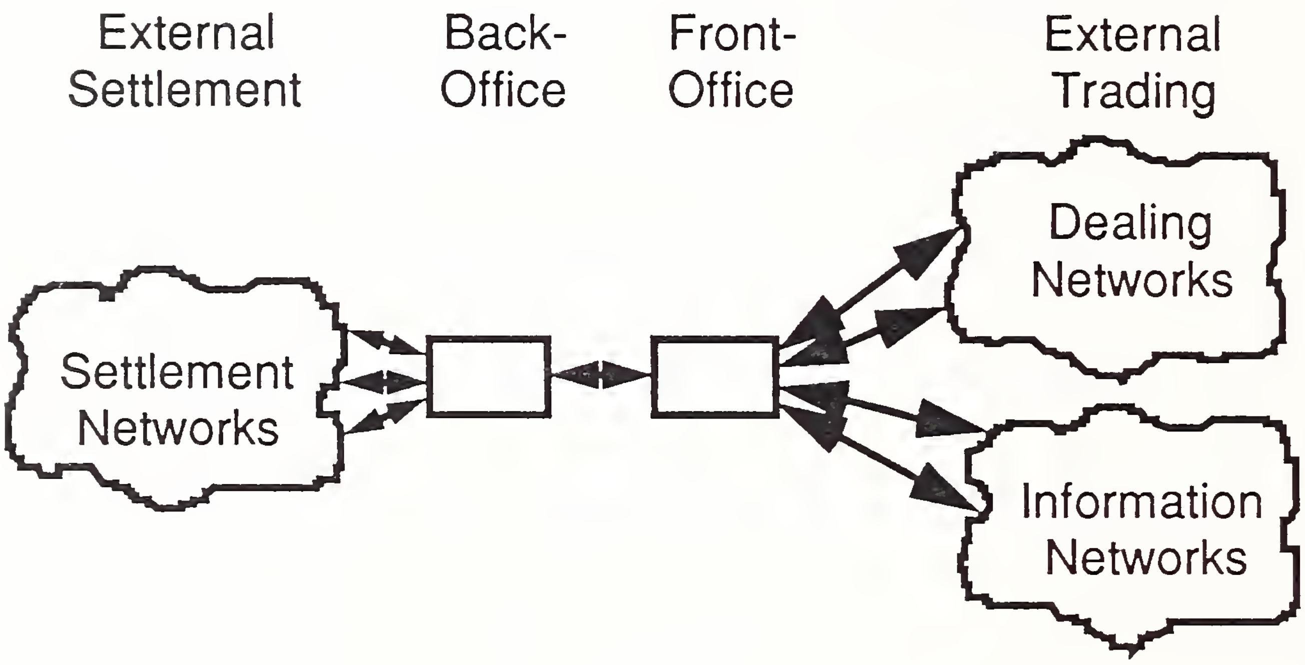


Exhibit 10 illustrates the different opportunity areas in securities markets.

- in the back office there are software product opportunities for packaged solutions (BIS, McDonnell Douglas, Tibet—recently acquired by Sema)

- to minimise cost, securities houses are looking for single integrated front-office solutions:

  - software products (Telerate, Reuters)
  - bespoke solutions (Cap Gemini Sogeti, SD-Scicon, Data Logic)

- AI opportunity software products:

  - charting
  - market analysers
  - risk assessment
  - forecasting
  - deal ticket making (Concept, Gecosys, GEIS, Software Sciences)

- network and integration opportunities for the front and back office (NMW, Admiral Computing, Cap Gemini Sogeti, SD-Scicon, Logica)

Exhibit 11

European Banking Environment

- Volatile
- Increasing competition
- 3/4 x average spend
- New technology

Exhibit 11 lists the key characteristics of the European banking market.

Just as the securities market is volatile, so in its own way is banking. Banks can be seriously affected by downturns in economic activity, and in recent years most major banks and their IT budgets have been affected by the demands on them to write off very large third world debts. Savings banks have tended to be less vulnerable to these external effects than other commercial banks.

Against this backdrop, European banks are facing a new decade when their traditional protective barriers will be torn down by the European Commission. Retail banks are seeking to increase their geographic coverage and product range and to move into new areas, such as house financing, insurance and stockbrokerage. Savings, mortgage and insurance institutions are also trying to move into commercial banking.

Banks managers today are more concerned over developing the right competitive strategy than maintaining profits. They are therefore prepared to increase their spending on information services to ensure that they maintain their bank's competitive position.

Traditionally, banks have spent a higher proportion of their revenues on information services than any other sector of the market. In the past, banks have reported allocating some 10% of their expenditures to information. INPUT's research indicates that this figure has in many instances risen to 15% or 20%, and could even increase over the next few years.

The 15% to 20% level of expenditure by banks on information services is at least three to four times that of other sectors. As a result, information managers in banking are very concerned over establishing the right priorities and maintaining development schedules within budget.

As part of the pressure on information managers to ensure that their financial institutions maintain their competitive edge, banks are always prepared to look at the latest technology. However, they have learnt from bitter experience that any new ideas must be fully tested via field trials before any serious investment is made. As a result, many new technological ideas are being tested by banks around Europe at any given time. However, vendors should be wary of believing many press comments about such systems being "commercial" when in reality they may be on trials extending over a number of years.

Exhibit 12

Banking Opportunities

- The customer database
- OLTP systems
- Customer systems

Within this highly active and competitive market, a number of key opportunities can be seen for software and services vendors, as illustrated in Exhibit 12.

Old account number databases throughout Europe must be redesigned to customer name designs to ensure that banks can offer the most competitive customer-orientated services in the 1990s. The problems of doing this are exacerbated by mergers and acquisitions. Information services managers will often find that the newly acquired or merged bank will have totally different back-office systems, making the job of creating a single, flexible customer name record system even more difficult.

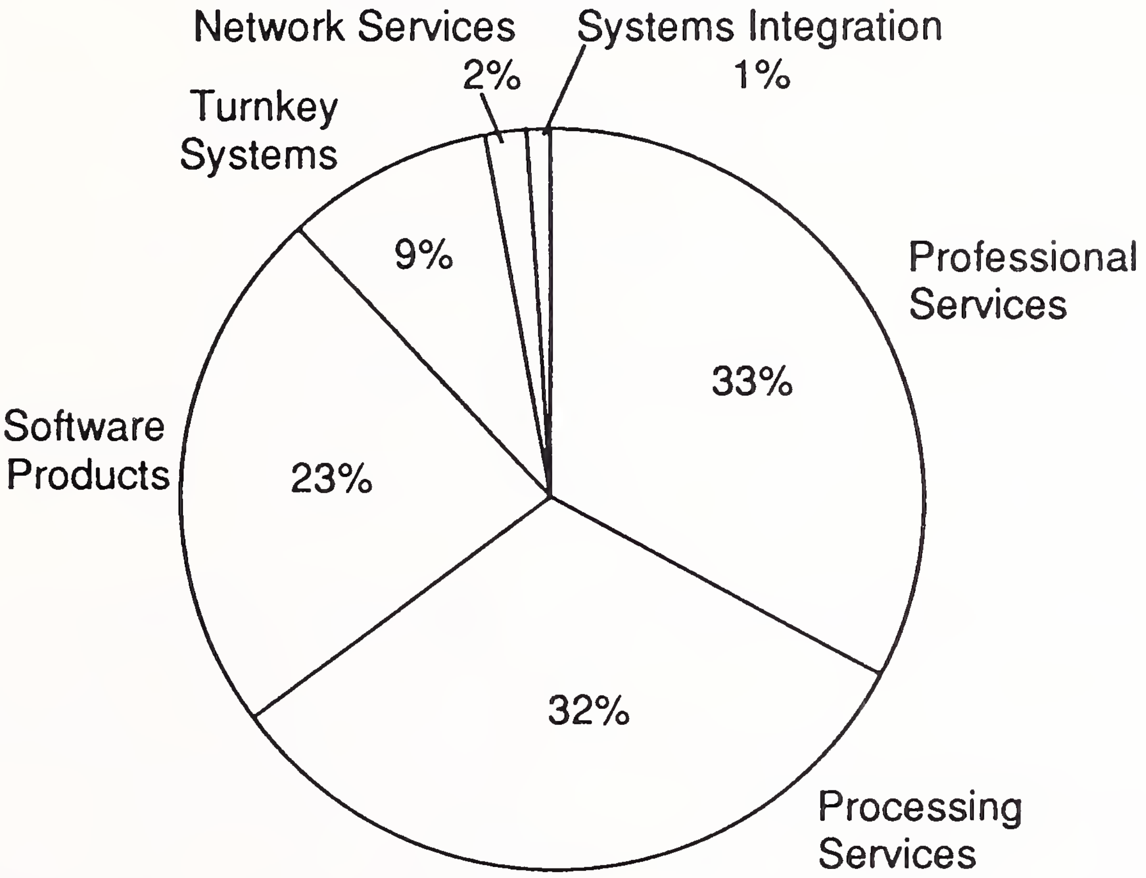
To meet the demands of the bank of the 1990s, these new back-office systems have to be flexible and capable of quick, cheap modification to allow new banking products and services to be launched whenever the market demands. Banks are therefore very keen to exploit 4GLs and CASE tools.

One of the major new demands being forced on banks is to offer more on-line products and services. This requires OLTP fault-tolerant systems and systems that can be expanded to meet the increasing needs of individual banks, as their customer bases grow not only through natural expansion, but also through acquisitions and mergers. The development of such systems is far from trivial.

The third area of major opportunity for vendors is in developing new customer systems so that banks can deliver sophisticated new products and services to their customers. These new products and services may not necessarily demand new equipment, but will undoubtedly require new systems to run them, which in some cases can be delivered entirely by third-party vendors.

Exhibit 13

Western European Banking Market



Total Market 1990 = $9 Billion

Exhibit 13 illustrates the breakdown of the banking software and services market by delivery mode. With some 70% of processing services delivered within CUG services, and one-third of software products being systems software delivered by equipment vendors such as IBM, the major opportunities in banking have been in the area of custom software, delivered as professional services.

With development costs always a major consideration, the banking market needs access to standard software product solutions, or at least kernel products that can be readily customized. For the smaller savings and wholesale banks, such standard packaged solutions are available. However, the larger the bank, the greater the limitations of these standard solutions and the greater the economic sense of implementing custom solutions.

Although many vendors seek to develop and modify their standard solutions for larger banks, at the same time banks are increasing their size through mergers and acquisitions. As a result, INPUT sees that custom solutions will remain very important to the European banking community.

Exhibit 14

Vendor Profile—CSC

- IS consultancy
- Security services
- Bespoke services
- Packaged solutions
- EFTPoS

Computer Sciences Corporation (CSC)

Computer Sciences Corporation of the U.S. has specialised in information services consultancy in Europe for many years. Until very recently, it had only a limited involvement in Europe, specialising in areas such as NATO and government contracts.

With the European banking market demanding bespoke software development services, CSC naturally developed its talents in this market. It specifically offered services such as quality assurance and strategic development consultancy. In the U.K., CSC made a short foray into banking software products, but opted out upon finding the market overcrowded.

Within the area of professional services, CSC discovered that fraud prevention and bank security is an extremely lucrative offering if targeted in the right way. Research has indicated that 70% of fraud is carried out internally within banks. This makes the job of selling security services relatively easy, as cost/benefit arguments can be very effective and fees justified directly from potential savings on internal bank fraud.

In 1989, CSC took over the largest Belgian software and services vendor, CIG-Intersys. Together with the acquisition of consultancy services such as Inforem in the U.K. and the Index Group of the USA, CSC has more than doubled its total European revenues—to some $200 million—making it one of the largest independent vendors in Western Europe. Exhibit 14 illustrates the different banking and finance products and services now offered by CSC in Europe.

Before being acquired by CSC, CIG-Intersys had been heavily involved in Belgian banking for many years. It had developed the EFTPoS service MR. CASH, plus the packaged solution MONEYTOR. It also offered processing services to banks, such as Bank of Canada.

The CSC takeover forced CIG-Intersys to sell off its involvement in MR. CASH. However, through 10 years of experience in EFTPoS, CIG-Intersys had also developed AURORA, a sophisticated debit/credit card EFTPoS service for retailers. The old management of CIG-Intersys sees tremendous potential for EFTPoS services throughout Europe. CIG-Intersys has exported its expertise to France, where SG2 sells its products, and it sells its own products directly in Scandinavia and West Germany.

Exhibit 15

CSC Experience

- Long-term demand for IS consultancy
- Fraud means opportunities
- Packaged solutions to medium-sized commercial banks
- EFTPoS major opportunities

Exhibit 15 summarises the experience of CSC in the European banking market. It believes that:

- there is long-term demand for IS consultancy, especially to the larger banks, which look to third-party vendors to provide project management for specific developments
- fraud means opportunity to the software and services vendor, if marketed in the right way
- there are packaged solution opportunities for medium-sized banks in some, but not necessarily all markets
- EFTPoS is a major source of opportunities throughout Europe

Exhibit 16

Vendor Profile—Concept

- Software products
  - Securities markets
  - Portfolio management
  - Bank management systems
- IS consultancy
- Processing services
  - Italy

Concept

Concept is now the fourth largest independent French vendor and the eighth largest in banking and finance.

Virtually all major French software and services vendors have some involvement in banking and finance. Even though only about 18% of Concept's revenues come from this market sector, it generates some 30% of the company's profits. France is Concept's main banking and finance market, accounting for around 50% of revenues. The remainder of its revenues are generated from Italy and Spain, and to a lesser extent from Belgium, Portugal, Switzerland and the U.K.

Traditionally, the French market has tended to prefer bespoke solutions to standard software product solutions. Concept has specifically gone against this trend by developing software products not just for the French market, but specifically for export. It looks for software products that can be readily translated into other European markets, and for conformity of product lines in all its subsidiaries. Concept believes that the major southern European markets of Italy and Spain will be modelled on the French market.

As Exhibit 16 illustrates, Concept's banking and finance products and services are not confined to software products, but also cover IS consultancy. In Italy it has some processing services through its Italian subsidiary CDS, but these are on the decline and not part of its standard international offering.

Its software product portfolio for banking and finance is extensive, covering securities markets, risk management, expert systems, funds and portfolio management and total banking systems. If required, Concept customizes these products. Its professional services are referred to as "practical" IS consultancy, rather than "theoretical" management consultancy or project management. It is also developing disaster recovery and maintenance services.

Exhibit 17

Concept—Experience

- Banking sector very profitable
- Use kernels for export
- Practical not strategic IS consultancy
- Processing services declining

Exhibit 17 summarises the experience of Concept in the banking and finance market. Concept sees that:

- the European banking and finance market is very profitable, but only by exploiting it internationally—hence Concept's strategy for developing a standard portfolio of products and services that can be readily sold throughout Europe
- wherever possible, it uses kernel products to achieve its goal of readily exportable software products
- its IS consultancy services are geared to support its software products sales, such as advice on operating structures, installation of equipment and networks. It sees that UNIX will become a major force in this market in the 1990s, resulting in major opportunities for IS consultancy.
- processing services do not fit into this standard pan-European strategy, but Concept is not concerned over its declining involvement in this area

Exhibit 18

Customer Database

- Cross-banking issue
- Major migration opportunities
- CASE/4GLs

One of the fundamental issues to be addressed by all European banks is how to convert their prime customer databases from the old account record formats to customer name records, as indicated in Exhibit 18.

Because of the dominance of IBM in banking back-office systems, in many instances these old databases are based on IBM's IMS database. Many of them have been modified over the years. Many financial institutions have gone or will go through mergers and acquisitions and inherit new customer databases that are incompatible with their existing structures.

The problems of redesigning and migrating old databases to new customer name record databases would be hard enough if the banking market did not also have to contend with major competitive pressures to offer new financial products and services—let alone the looming problem of ensuring that all systems will be able to handle information to the year 2000 successfully.

INPUT sees that there are major opportunities for software and service vendors to assist banks in this migration. These opportunities will certainly be in the form of IS consultancy, as well as custom software development services.

For the larger banks, CASE tools are already considered essential to assist them in keeping to development schedules, and they expect to increase their use of CASE substantially. Smaller banks are looking to software products solutions. Flexible solutions based on 4GLs can give these banks the ability to quickly react to changing market conditions and redesign their systems to allow them to launch new products and services cheaply.

Exhibit 19

OLTP Systems

- IBM back-office dominance
- OLTP front-office opportunities
  - Front/back-office links
  - Customised software products

The 1990s will undoubtedly force banks to provide on-line services to customers. This means installing OLTP capacity in the front-office and probably fault-tolerant OLTP capacity. Exhibit 19 lists the key elements in installing OLTP capacity.

IBM itself does not have any fault-tolerant OLTP equipment. It relabels Stratus equipment and sells it under the name System/88. A number of vendors consider that the power of the Stratus is suitable for most securities houses, but often cannot handle the large volumes demanded by many banking systems. Only Tandem with its Cyclone, and the new Digital VAXft 3000 are considered capable of meeting the current and likely future demands of these systems for banks, although Stratus has just launched its mainframe version of the XAZoro series.

IBM seems to have currently found itself in a position where it cannot supply the growing demands of one of its major client groups—banks—for new fault-tolerant front-office equipment. This equipment is needed to run on-line services such as EFTPoS, ATMs and, potentially, EDI services.

For security reasons, many banks do not like the idea of allowing their customers direct access to their prime database. Hence many banks are considering having two OLTP machines: one the external customer front-office processor, the other a fault-tolerant back-office processor which batch updates the traditional back-office mainframe. Such front/back-office developments are by no means trivial and offer independent vendors major opportunities to provide migration services for banks.

In addition to assistance in developing such fault-tolerant front-office systems, banks will need these systems to be customized, since it is in the front office that they need to gain competitive advantage in the new deregulated market of the 1990s.

UNIX is also considered important for front-office systems in banking—but for branch, not OLTP systems. Many vendors consider that there will be “off-the-peg” UNIX branch office systems for banks available in the near term, which will be cheap and efficient.

Exhibit 20

Corporate Customer Services

- Growing availability of separate services
- Direct PC access systems
- EDI

Exhibit 20 lists the types of services that corporate banking customers will be offered in the 1990s.

There is a growing availability of financial services from a wide range of sources. Corporate finance managers can plug straight into electronic money markets, foreign exchange, or electronic credit checking services. Independent vendors are offering corporate financial modelling packages. If banks wish to maintain control over their corporate customers, they must provide fully integrated solutions to ensure that these customers channel all of their financial dealings through these single interfaces.

Many banks are therefore developing or considering developing PC access systems to sit on corporate financial managers' desks. In some countries, local videotex systems are used, such as in France and West Germany. However, for many corporate customers, the PC is preferred.

In addition to direct access by corporate personnel, the 1990s will see rapid growth in corporate computer access to banks via EDI. The demands of JIT in manufacturing can increase the number of invoices by a factor of 60 and decrease the lead time for processing orders through the whole delivery/payment chain to a matter of hours. In these circumstances, banks will have to front-end their EDI services with fault-tolerant equipment to ensure guaranteed corporate customer service.

Exhibit 21

The "Banking Mall"

- ATMs and MultiBank
- EFTPoS
  - Credit/debit cards
  - Smart cards
  - Handheld terminals
  - Total solutions
- Home banking

For the private customer, banks are seeking to expand their range of products and services from just loans and credit to insurance, house financing, and investments, and even to holiday travel and consumer durables. The bank of the 1990s will become a financial shopping mall, as indicated in Exhibit 21.

Banks are experimenting with sophisticated ATM sites. In Scandinavia, the concept of the "MultiBank" has evolved. In Norway, Fellesdata is testing a unit which gives direct access to the customer's account and other databases through PIN authorisation, E-mail services for ordering foreign currency, new chequebooks and even small loans, plus a teller printer to update passbooks, print vouchers and write letters. However, problems have been found in the OCR in the teller printer, and this will have to be changed.

Perhaps the most explosive opportunity for private client services is in EFTPoS. There are major moves by both retailers and banks to use debit rather than credit cards. Market research has indicated that over 75% of the public prefers cash to credit cards and will be prepared to substitute the debit card for cash.

Banks, therefore, see that a new boom could happen, with debit cards fuelling an exponential growth in cards and EFTPoS services. One of the most exciting opportunities is for handheld terminals. Belgium is testing on-line radio linking of handheld terminals, and the U.K. is testing replaceable memory modules with the intention that these can be used by any small local trader—whether fishmonger, restaurateur, or milk roundsman.

INPUT believes that there are major opportunities for vendors to offer not only EFTPos software solutions, but complete EFTPoS systems operations services.

At some stage, smart cards will be introduced. These have major attractions for banks as they allow the banks to exploit them using their own creativity. However, INPUT does not see that they will make any impact for at least 5 years. Similarly, home banking—which may have been a success in Finland for special climatic reasons—is unlikely to spread commercially throughout Europe until the mid-to-late 1990s.

Exhibit 22

Vendor Challenges

- Banking experience
- Delivering on time
- Standard or custom solutions
- Network/integration skills

The challenges facing software and services vendors in the banking and finance markets in the 1990s are summarised in Exhibit 22.

Vendors must have staff with banking and finance experience. Equipment vendors in particular have failed to do this in the past, and some have now realised that this was a mistake.

Banks demand that products and services be delivered on time. With the pressures on IS managers in banking and finance increasing in the 1990s to improve services and to stay in budget, the challenge to deliver on time will remain key to the success of vendors in this market.

Vendors need to decide whether they will target the standard total solution market—for small to medium-sized banks and securities houses—or custom solutions—for the larger banks and security exchanges. In both sectors, there will be niche market opportunities for specific software product sales.

Whatever product or service is targeted, and whether securities or banking, vendors will need to have networking and integration skills in the 1990s. Networking skills will have to cover both LANs for branch offices or trading rooms, and WANs for interenterprise demands.

Exhibit 23

Vendor Recommendations

- Monitor deregulation by country
- Define competitive strategy
- Target specific market sectors
- Identify leading-edge products/services
- Ensure network capabilities

INPUT's recommendations to vendors are summarised in Exhibit 23.

It is essential that European Commission legislation on deregulation be monitored closely, preferably via Brussels and DG XV. INPUT also recommends that the effect of this deregulation on each country to be targeted by an individual vendor be closely followed, as the local effects can be very specific to that national financial market.

Specific banking and finance markets should be targeted. Many of the opportunities in the area of banking and finance are niche rather than general.

It is interesting that many of today's leading-edge products and services for banking and finance have not been developed in Europe, but in the U.S. and Japan. The banking and finance market is global. Before developing products and services in-house, vendors are recommended to look around outside of their national market—first around the rest of Europe, and then outside of Europe, to ascertain whether a similar concept already exists that could be imported and exploited profitably.

A final recommendation is to ensure network capabilities. The thread running through all banking and finance software and services markets is that of networking. The necessity of this skill—especially as a pan-European skill— will only increase, rather than decline during the 1990s.

This Research Bulletin is issued as part of INPUT's Market Analysis Programme—Europe.

If you have questions or comments on this bulletin, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493-9335, Fax (071) 629-0179

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

Headquarters
1280 Villa Street
Mountain View, CA 94041-1194
(415) 961-3300
Telex 171407 Fax (415) 961-3966

New York
959 Route 46 East, Suite 201
Parsippany, NJ 07054
(201) 299-6999
Telex 134630 Fax (201) 263-8341

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
(703) 847-6870 Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
(071) 493-9335
Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
(33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
(03) 864-0531 Fax (03) 864-4114

June 1990
MAPE Vol. I, No. 4

Route to:

INPUT LIBRARY

INPUT®
Research
Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

European Software and Services Market, 1990-1995—Insurance Sector

European Insurance Companies Face Major Information Systems Rethink

European insurance companies are being forced to fundamentally rethink their approach to information systems as they face the need to create fully electronic systems to compete effectively in the 1990s. These new demands are driven by EEC deregulation and the competitive moves by the banking establishment into the insurance field. The resultant demand for software and services is creating a rapidly developing opportunity for vendors that offer networking services, specialised software and professional services.

Investment in information technology is running at 15% of insurance companies' operating expenses. The large insurance companies looking to become pan-European operations are prepared to allocate considerable financial resources to information systems, mirroring the activities of the banks prior to the "Big Bang" in the City of London. In insurance, the "Big Bang" is the dual advent of the 1992 Single Insurance Market initiative and the moves by the banking industry to offer insurance services. The link between banking and insurance has been further strengthened by a spate of merger and acquisition activity and the establishment of alliances between banks and insurance companies throughout Europe. The exploitation of the obvious synergy between banking and insurance services to develop complete financial services portfolios will require considerable investment in information technology.

Exhibit 1

The Insurance Industry Information System Challenge

- Pan-European insurance market
- High information insurance market
- High information system expenditure
  - 15% of operating expenses
- Demand for flexible, responsive systems

Firstly, software and services vendors have the chance to satisfy the requirements of pan-European-orientated companies for integrated information systems and networks. Specific vendor opportunities include the provision of financial analysis programs, decision support tools, electronic information services (EIS), electronic data interchange (EDI) systems, application tools and custom software solutions. These large companies need solutions to their applications backlog whilst at the same time requiring flexible systems and systems compatibility.

Secondly, in local insurance industry markets there is considerable opportunity for vendors to provide software products and turnkey systems. Agents and brokers will be placing contracts for bespoke software with companies that understand the user's business and have established a presence throughout Europe.

Exhibit 2

Software and Services Opportunities

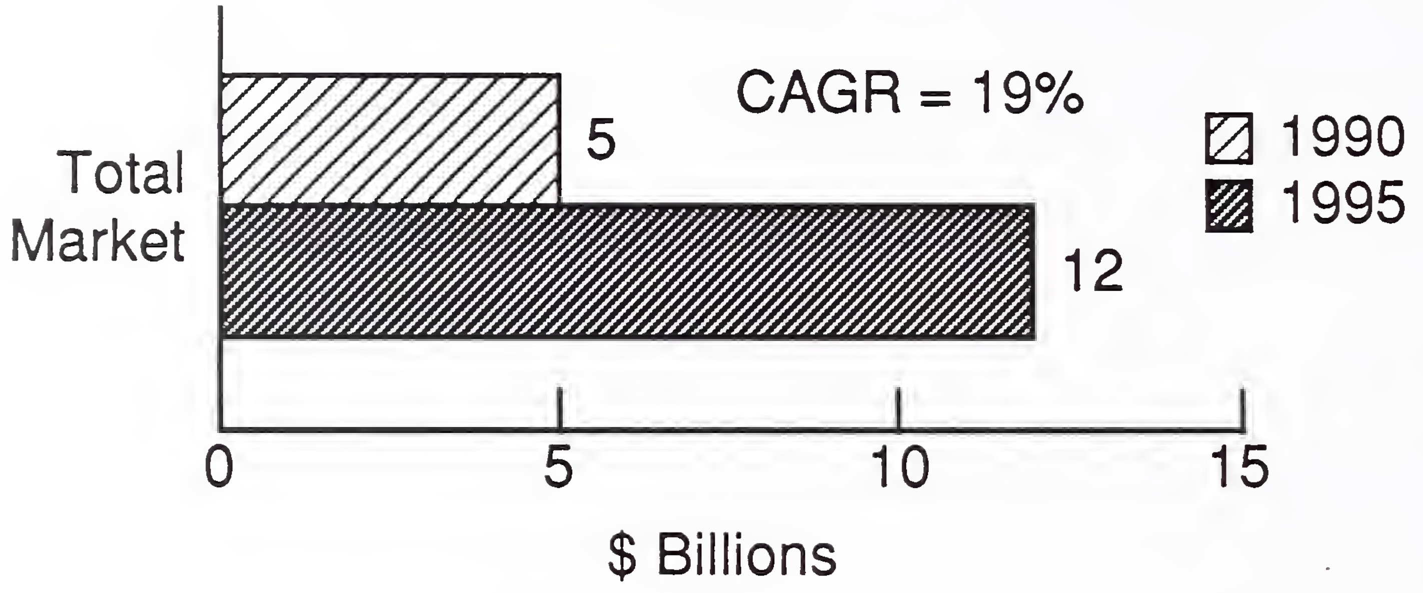
- Systems and network integration
  - New products and services
  - Competitive edge
- Software products
  - Custom software
  - Packaged solutions

Insurance companies are looking for changes in distribution channels in order to improve levels of service and develop expertise in systems and network integration, as well as use of the latest technologies. Insurers are looking to be leading-edge players in the electronic revolution of the 1990s. Professional services companies will need a thorough understanding of the insurance business to win these development contracts.

Software and services vendors need to offer products and services that provide the large insurance companies a competitive edge over the banks. Systems need to be flexible and compatible. Vendors should also be looking to provide software products that enable local insurers to interface effectively with head office.

Exhibit 3

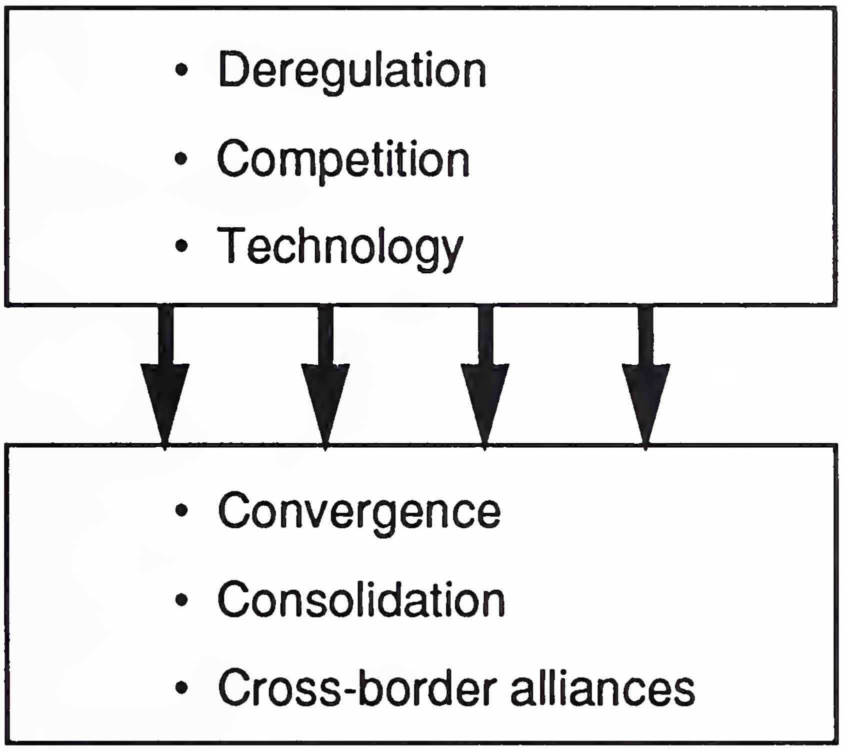
European Insurance Sector: Software and Services Market Forecast, 1990-1955



The volatility of the European insurance industry will have a considerable impact on information and communications technology expenditures. INPUT forecasts that the insurance sector software and services market will be worth $12 billion in 1995.

Exhibit 4

European Insurance Industry—Driving Forces



- Deregulation
- Competition
- Technology

- Convergence
- Consolidation
- Cross-border alliances

Insurance in Western Europe is undergoing a period of profound change. Insurance companies have been slow to respond to the changes surrounding them compared to other sectors (such as banking), sheltered as they are in some markets by regulators' convictions that insurance is more important to consumers than other financial services, and in other markets by the near-impenetrability of insurers' products and financial statements.

This change has been caused by a complex interaction of forces—including deregulation, competition, rapid technological developments and the gradual penetration of banks into traditional insurance markets. Exhibit 4 shows that convergence, consolidation and cross-border alliances are occurring all over Western Europe in the same manner as happened with banks and investment houses. However, insurers are concerned about the entry of the banks into their traditional markets and are having to expand rapidly when profits are contracting in a belated attempt at becoming international all-purpose operations. Meanwhile, insurers are operating in an extremely competitive environment within their domestic markets.

Exhibit 5

Insurance Sector under Pressure

- Single European market
- Gradual penetration of banks
- Attitudes to security
- Growing elderly population
- Global warming

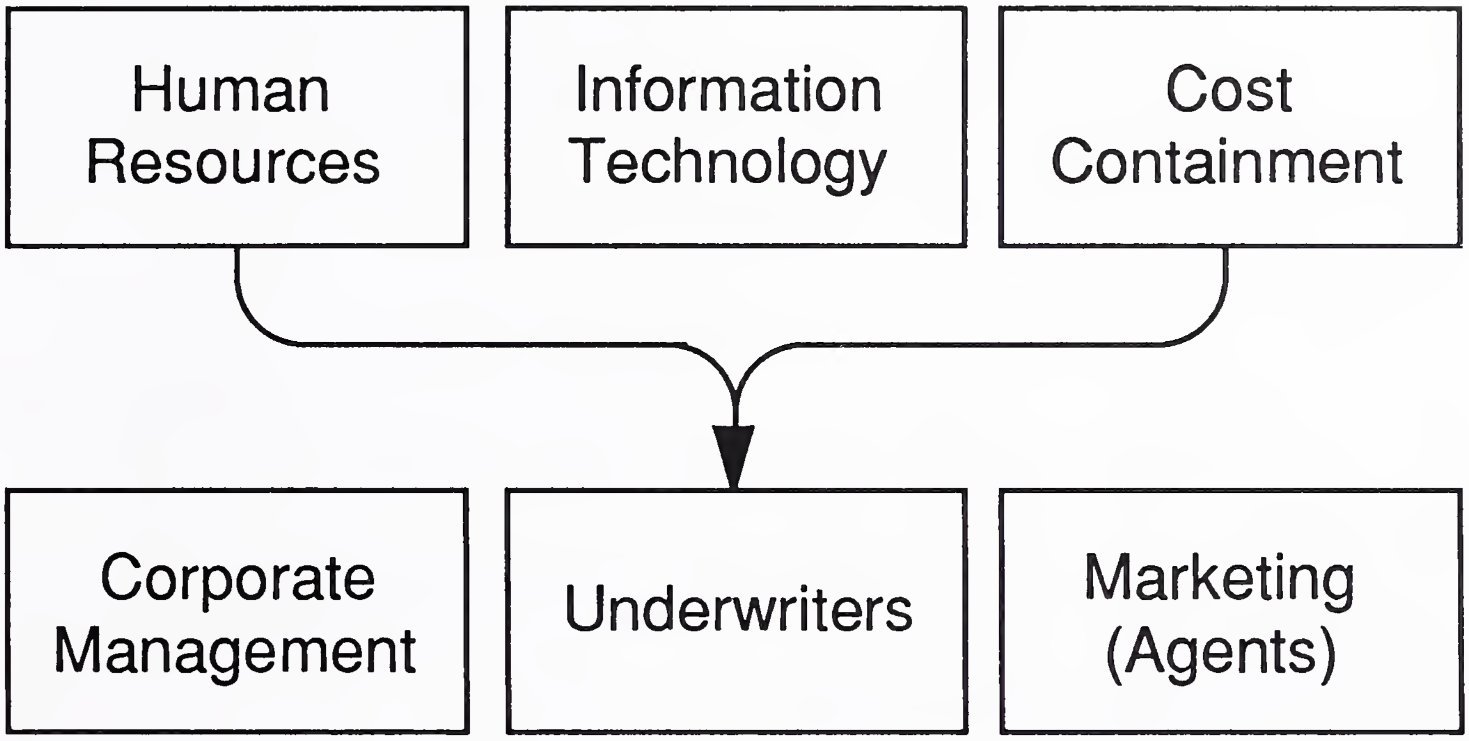
External

Internal

Additionally, there is the challenge of the single European market as well as the gradual entry of banks into the insurance business. Within the insurance business itself there are other, more pressing concerns: a growing elderly population, the effects on the climate of global warming and the increasing (apparent) negligence of large multinationals with regard to security as they try to improve efficiency and maintain competitiveness in an increasingly cut-throat market. Exhibit 5 shows pressures on the insurance industry.

Exhibit 6

Key Operational Issues



- Service differentiation
- Speed of client response

The key operational issues identified amongst insurance companies looking to compete with banks are:

- Human resources
- Information technology
- Cost containment

The required refocussing of staff responsibility is resulting in increased use of information technology. However, there is still enormous scope for reducing the volume of clerical tasks and using technology to improve customer service and product delivery. As a result, INPUT anticipates that the industry will invest heavily in client-related rather than policy-related systems. A major opportunity is innovative technology such as image processing and expert systems.

However, one of the problems in the insurance industry—although not exclusively an insurance problem—is that past investment in technology has failed to deliver the extra service capability or financial return expected. Future investment needs to be clearly focussed so that real progress can be made in insurance service levels and product distribution whilst not increasing overheads.

The insurance industry has been trying to resolve the human resources versus investment in technology dilemma since the mid-1970s, and a few companies have achieved full implementation plans. Their systems carry out the essentials, such as:

- Claims registration
- Claim acknowledgement
- Third-party instruction (for adjustors, surveyors, et al)
- Claim payment
- Claim statistics

There remain opportunities for software and services vendors in that a claims operation of insurers or brokers deals with a number of different business areas and as a result the provision of statistics is a key element of the internal service and support function. For example, corporate management, underwriters and marketing are all internal clients of the claims department, each with different information requirements, each a key area of the business and each requiring network and systems integration, software products and professional services.

Many insurance companies are looking for competitive edges in service differentiation and require a high level of information, to maintain:

- Service level of claims
- Customer support opportunities
- Trends in complaints
- Renewal positioning of claimants
- Average time between notification and settlement

Database management software and application software that run on efficient, fast networks will speed this process.

The burden of internal service will increase as underwriters attempt to target precise groups and produce different rates and marketing profiles. To achieve a high level of service, there will be an increasing need for EIS and financial analysis software.

General information on clients, trends and service opportunities will require integrated systems, application software products and, in the less developed markets, turnkey systems.

The impact of these three key groups is illustrated in Exhibit 6.

Exhibit 7

Areas of Opportunity

- Systems and network integration
- AI/Expert systems
- Custom software
- Application development tools
- Network applications

As insurance companies strive to compete more effectively, they are offering an increasing gamut of products and services that compete with those of banks. However, in order to effectively carry out large-scale systems development and systems and network integration projects, insurers are looking for systems and network integrators with expert knowledge of the insurance industry (or even of a specific subsector of the industry), as well as experience in developing complex systems for the industry. This search for expert knowledge and experience presents a challenge for systems integrators.

Repetitive, high-volume applications that often require some kind of judgement by insurers lend themselves to artificial intelligence and expert systems and thus are being developed for a variety of insurance applications, including underwriting/risk management, claim management, adjusting, investment management, personal financial planning, policy customisation by agents and medical review analysis.

Network and electronic information services for electronic mail and EDI services are used by all subsectors of the insurance industry. This market sector will grow rapidly over the forecast period. EDI in particular offers considerable expense and time reduction in moving data between agencies and insurers, and, ultimately to consumers.

The RINET and LIMNET networks use the IBM Information network; the BROKERNET service uses the INS/GEIS network; France has adopted the Belgian ASSURNET network service using the Transpac network; and Siemens and a consortium of German insurance companies set up the MEGANET network. All provide connectivity to thousands of organisations and agents. In addition, there are also other private networks available for EDI services to the insurance industry. There are opportunities here for vendors to develop network applications for the growing network infrastructure in Europe.

Personal computers are being used for many applications in the insurance industry; spending on microcomputers is expected to increase by 50% in 1990. In the more mature markets of Northern Europe, an example of an application would be agents' use of PC software as a marketing tool, enabling them to make a more effective demonstration and to present more alternatives to the customer during a sales call. In the less developed markets of Southern Europe, turnkey systems, a sector dominated by Nixdorf, will prove the ideal solution for the smaller insurance operations.

Most IS departments and some end users within the insurance industry are developing their own applications by using external resources as a supplement to internal resources. There is consequently an excellent opportunity for application development productivity tools. Another opportunity is for vendors to provide systems for new areas in insurance —e.g., long-term disability insurance—as well as for new distribution channels, including those in foreign markets. These areas of opportunity for software and services vendors and insurance companies are shown in Exhibit 7.

Exhibit 8

Issues and Opportunities for Software and Services Vendors

Issues

- Consolidation within industry
- Cost reduction

→ → **Opportunities**

- Network integration
- EIS
- Decision support tools
- Custom software

Driving forces within the insurance industry translate into major issues for software and services vendors that sell to the industry. Certainly any new systems must provide for the legislative changes occasioned by the European Commission's financial services directives. These changes directly affect the industry and those selling to the industry.

One of the key issues for software and services vendors is the insurance companies' need for cost containment. With insurance companies in Western Europe expanding by mergers and acquisitions, there is a need to boost productivity and improve revenues; vendors should consequently be looking to offer additional services as a means to maintain a competitive edge and improve productivity. One of the key areas is risk management: financial analysis programs, decision support tools and electronic information services providing actuarial and investment information are some of the products and services that go some way towards reducing insurers' risk exposure.

With the spate of mergers and acquisitions occurring in the Western European insurance industry, software and services vendors are presented with an opportunity to develop ways of connecting systems using different equipment, software and services. However, these products need to be made available so that information can be shared within the resulting organisation in a short time frame: this prompt sharing is unquestionably the challenge. Another current difficulty vendors face is the length of the development cycle. The length needs to be reduced to satisfy the demands of insurance. On the other hand, this perpetual difficulty offers opportunities for new players.

IS managers within insurance companies are faced with a series of challenges as a result of the frenetic activity taking place in the insurance industry: IS managers' central objective—providing services to end-user groups—is hindered by the need to improve revenues and cut costs. With information handling being such a key activity in insurance, IS managers are looking for flexible systems that can be expanded and modified for long-term usability.

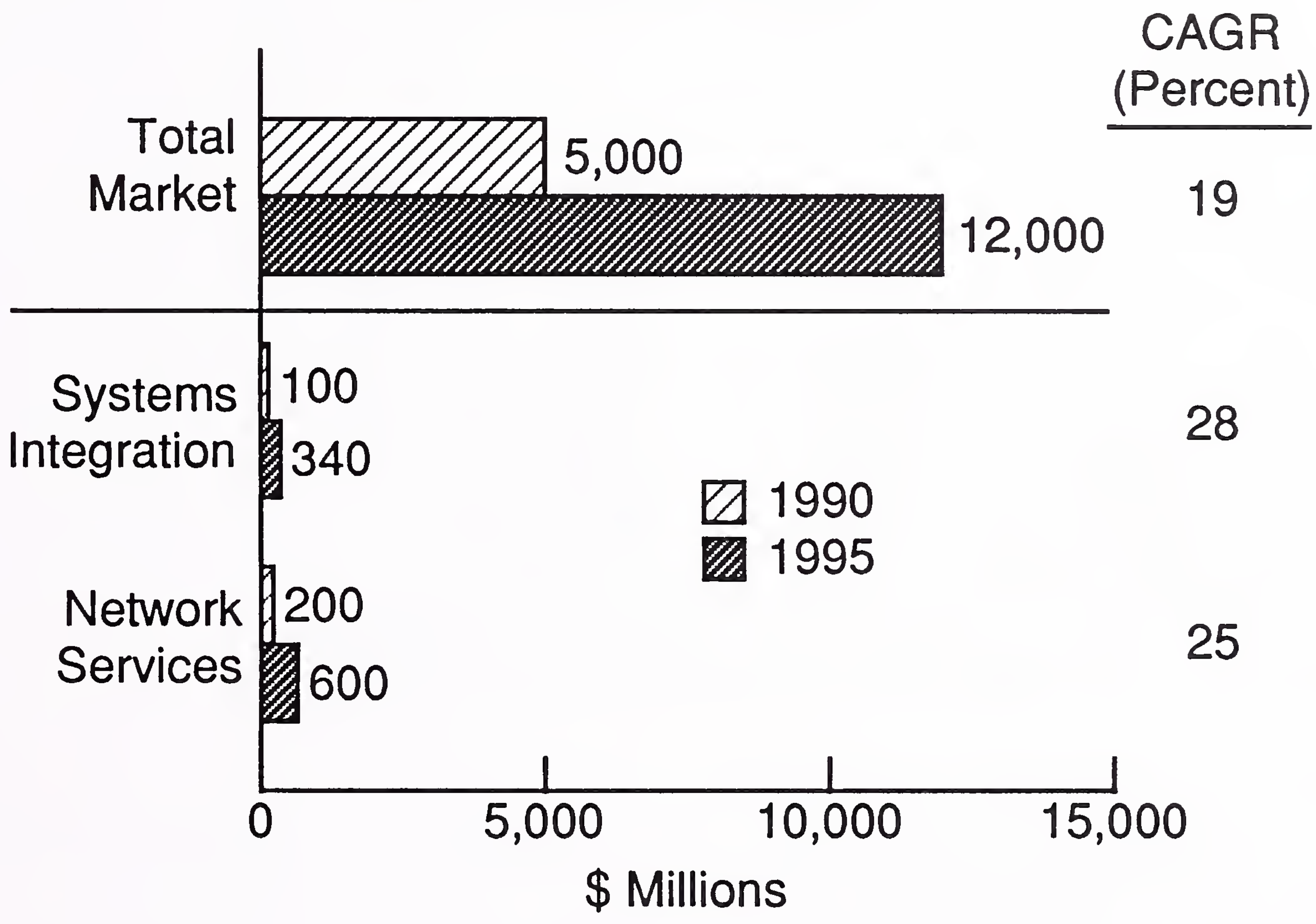
This need for flexible, easily expandable and modifiable systems is particularly noteworthy given the huge backlog of applications at insurance companies: users constantly need new applications, enhancements to existing ones and maintenance of existing operations.

Furthermore, with consolidation occurring as a result of acquisitions, IS managers are finding that they are being called upon to integrate systems as well as establish decentralised IS functions. In addition, there is a chronic shortage of skilled staff throughout Western Europe. As a result, INPUT is anticipating high growth in the professional services sector as more and more companies turn to third parties to help carry out these sea changes.

Finally, for end-user departments within insurance companies, the issues are clear: access to information enables end users to offer more services and a better quality of service to customers. In addition, end users want systems that are compatible with customers' and suppliers' systems, as well as systems within the organisation. With end users becoming more involved in the application development process, INPUT anticipates that the network and software products sectors of the insurance market will experience strong growth. These issues and opportunities are listed in Exhibit 8.

Exhibit 9

European Insurance Sector: Software and Services Market Forecast, 1990-1995

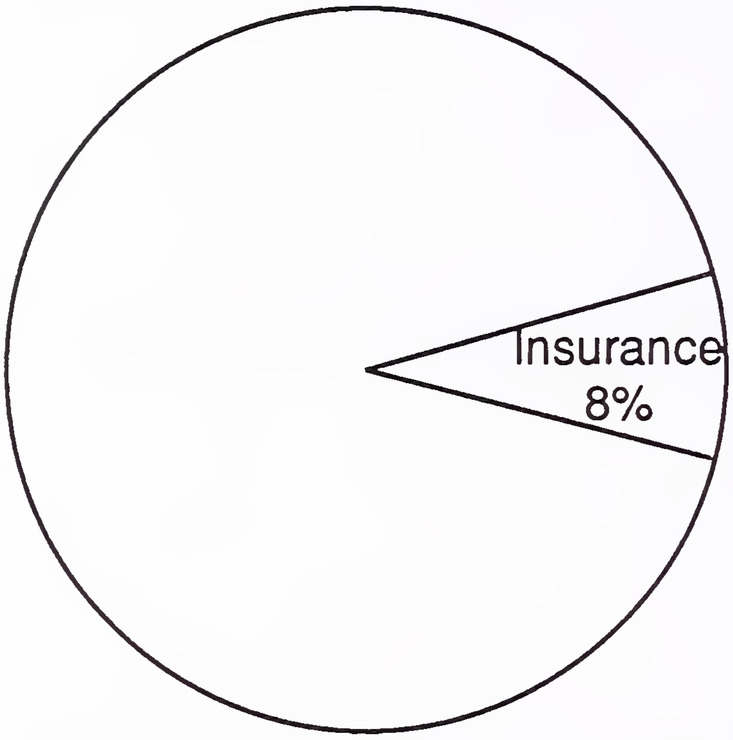


Uncertainty continues to surround market acceptance of technology as well as conceptions of the desirable rate and direction of technological change. However, INPUT forecasts that expenditures on software and services will, in relation to other categories of noninterest expense, increase dramatically over the next five years. The degree of increase may prove a new phenomenon for some European insurance companies.

Exhibit 9 illustrates that expenditures for software and services by the Western European insurance industry are estimated to reach $5.0 billion in 1990.

Exhibit 10

European Software and Services— Insurance, 1990



Total Insurance Market = $5 Billion

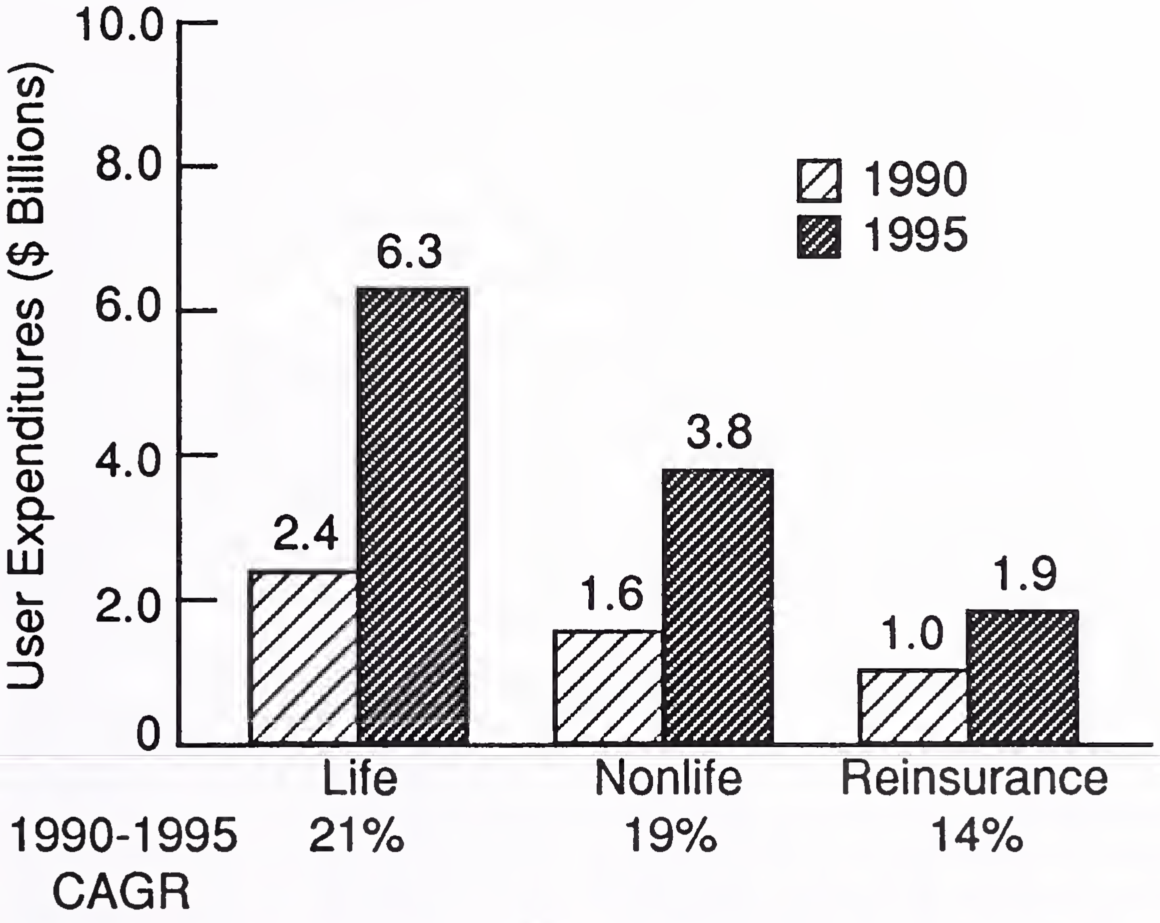
Total Software and Services Market = $60 Billion

Exhibit 10 shows that insurance represents 8% of the software and services market . Growth will be a compounded annual 19% over the next five years, reaching $12.0 billion by 1995. These figures are a result of the insurance industry's being an extremely competitive, yet currently fragmented, industry that relies on software and services for support in the areas of new product and service offerings and new channels of distribution, revenue production and cost containment.

During the five-year period 1990-1995, projected growth is highest in the areas of network services (23%) and systems integration (25%). Software products, turnkey systems and professional services will also show growth in excess of the industry average.

Exhibit 11

European Insurance Market Forecast by Business, 1990-1995



Life

The life subsector represents the largest of INPUT's three insurance subsectors. The group is also the fastest growing in terms of revenue, premium receipts and software and services spending, especially in network services and software products. Software and services expenditures for the life subsector will be $2.4 billion in 1990. Expenditures are expected to climb to $6.3 billion over the next five years. The life insurance industry has recognized the need to invest in software and services. There is a considerable policy, claim, actuarial and financial information involved with the operation.

Nonlife

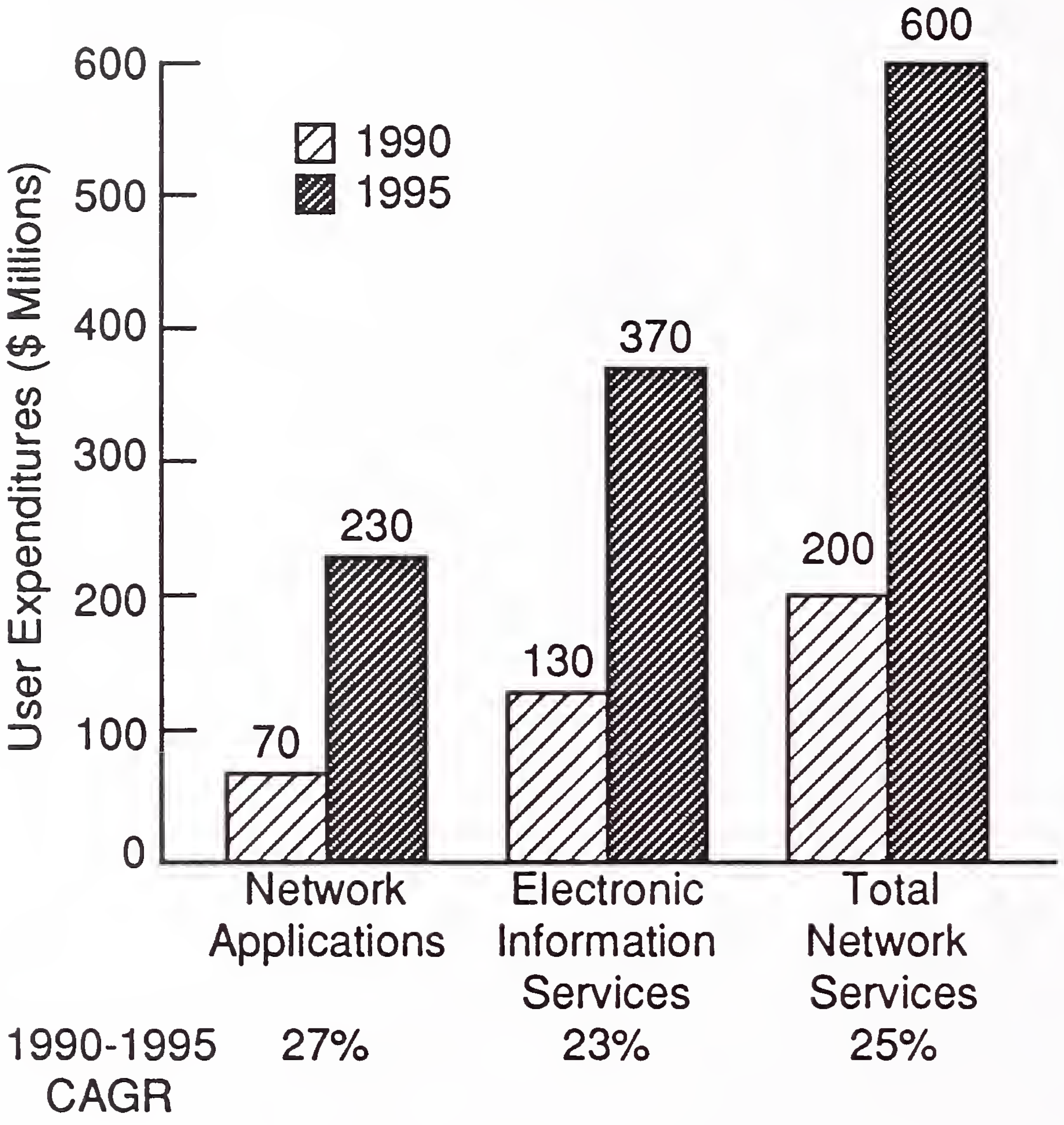
Like the life sector, the nonlife, or general, insurance subsector is expected to show strong growth over the next five years, from $1.6 billion in 1990 to $3.8 billion in 1995. Spending will occur primarily in the areas of network services, software products and systems integration. The subsector's underwriting loss has improved significantly, resulting in the subsector being in a position to invest in software and services and to expand in-house processing. Companies will purchase application software and contract with systems integrators for systems development and integration. Furthermore, investments in stocks and bonds will make electronic information services of increasing importance in helping insurers to track these investments.

Reinsurance

The reinsurance subsector has a high loss ratio. Reinsurance is the high-risk segment of the industry—profits or losses can vary widely every year. As a result, INPUT's market forecast for the reinsurance subsector shows a slightly lower growth figure than for the other two subsectors.

Exhibit 12

European Insurance Sector Network Services Market Forecast, 1990-1995



Insurers lag behind the banking and manufacturing industries in systems applications. Insurers have been slow to bring information technology managers to positions of influence. The tendency is for boards or decision-making groups to decide what they are going to do and fail to tell the information services division soon enough. Some of the biggest companies still don't have a client base, but a contract base instead. The older systems designed in the 1960s and developed in the 1970s were built around processing insurance contracts. The focus today is on servicing clients or intermediaries. The need to rewrite software represents a substantial investment.

One of the largest growth areas in the 1990s in the insurance software and services sector will be network services. For example, by the end of 1990, 90% of the market will be connected to LIMNET (London Insurance Market Network). (Currently 20% of the market is connected.) Forty percent of those interviewed by INPUT saw LIMNET as providing opportunities for underwriters to bypass brokers and deal directly with the insured. Dealing directly will dramatically alter the dynamics of the market. Insurance companies are relying more on network services, especially EIS (on-line databases) and insurance industry networks (RINET, BROKERNET and LIMNET in the U.K.; ASSURNET in Belgium and France; and MEGANET in West Germany, for example). These networks provide the capacity for efficient data interchange.

As a result, expenditures in these areas are forecast to increase significantly over the forecast period. Exhibit 12 outlines the growth expected in network services, including a breakdown between network applications and EIS for the insurance sector.

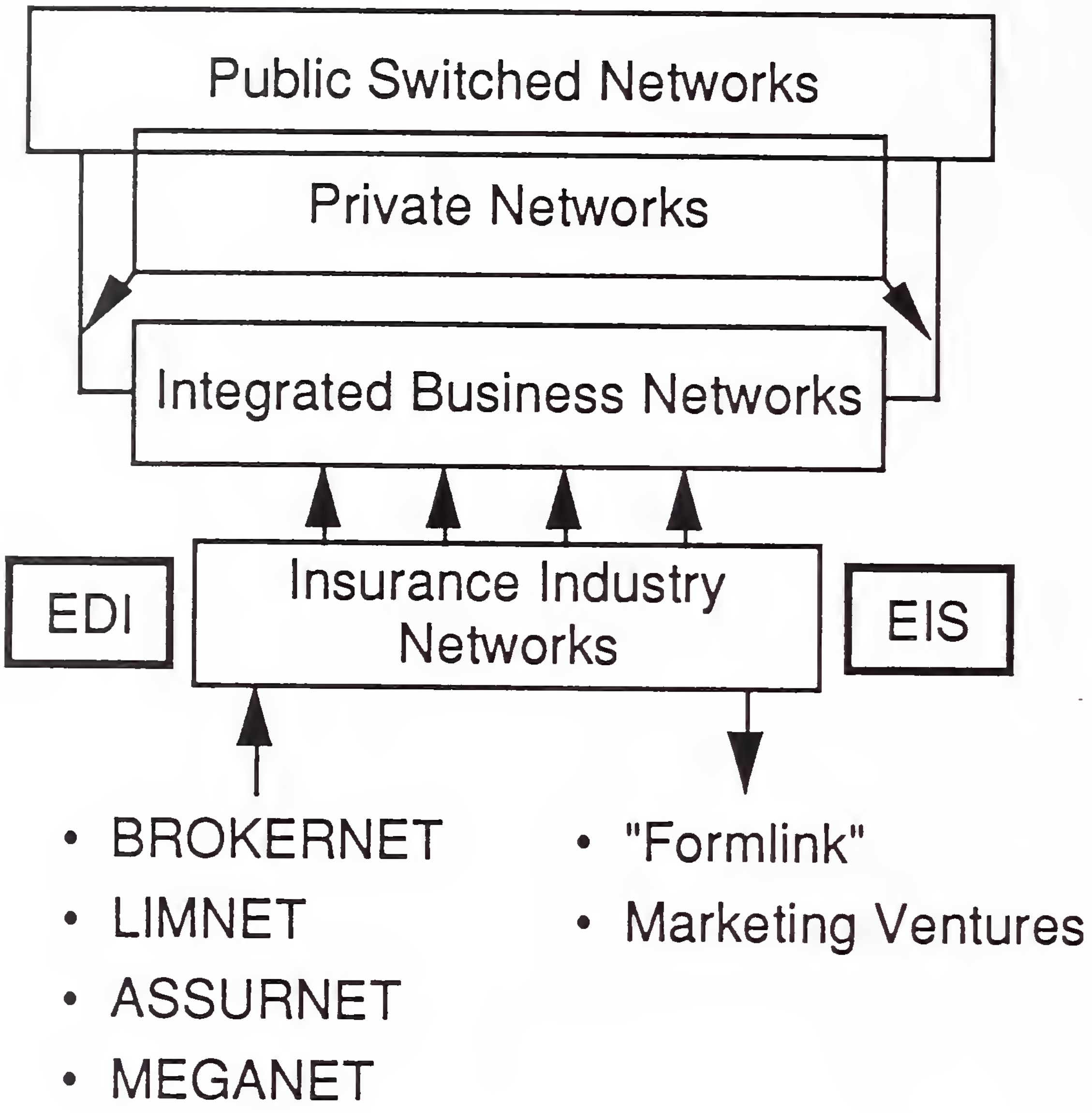
Furthermore, the insurance industry is a natural candidate for electronic data interchange (EDI):

- INS runs the BROKERNET motor insurance system.
- Istel Financial Services and Misys Dataller, a software house specialising in insurance systems, have a joint-marketing venture to provide EDI between intermediaries and insurance companies. Joint marketing applies also to the motor insurance area.
- IBM provides the network for a development in insurance EDI that could lead to a revolution in the way intermediaries deal with insurance companies.

An important development for the industry is that a consortium of leading U.K. insurance companies are funding the development of a system by Fame Computers called “Formlink”, which is effectively a conventional EDI system. Although insurers having been unwilling to use standard message formats, Formlink provides electronic replicas of paper documentation.

Exhibit 13

Networks: The Way Forward

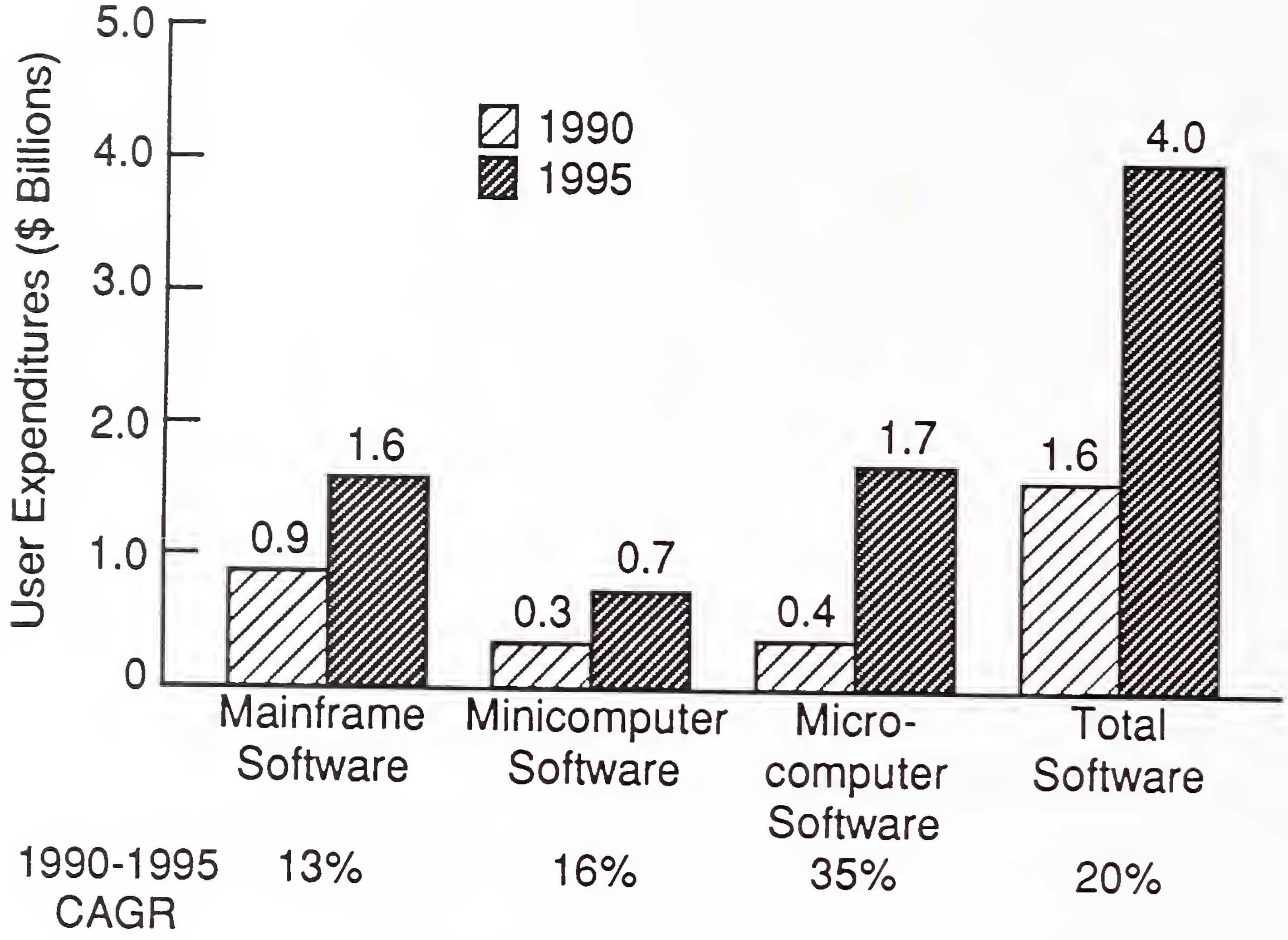


Establishing a common electronic network is crucial for the insurance business. Costs can be cut and individual insurers can compete through the quality of service they are prepared to offer their intermediaries once a level playing field has been established. These conclusions are confirmed by the insurers themselves, who want standard forms for attaining quotations and for the processing of policies.

Significantly, ten leading companies in the Lloyds of London insurance market have agreed to begin trading insurance risks electronically in 1990 and to do away with some of the face-to-face contact that dominates underwriting transactions. In continental Europe, a consortium of European manufacturers and users led by NV Phillips has begun a four-year project to develop an electronic case-handling system for the insurance industry. The system uses broadband communications to speed up by 50 percent the process of handling insurance policies in Europe. The project team aims to develop a system to let insurance companies move voice, data, text or video information from a company to the public switched network at up to 100 megabits per second. From there, the information would be transferred at 2 mbps across the public network to other sites. The project is also designed to reduce paper use—the European insurance industry uses up to 40 million trees a year for paper. The project team plans to develop a system based on Phillips' fibre optical storage technology and gateways to the public network. The systems will in turn link to a public 2-mbps broadband network that is planned for trial operation in 1991. Seventeen members of CEPT agreed last month to run the European Broadband 2-mbps Interconnection Trial (called EBIT) in 1991. Other pilot applications are expected to emerge to take advantage of EBIT.

Exhibit 14

Western European Insurance Sector
Software Products
Market Forecast, 1990-1995



On the software products side, the involvement of major insurance companies in software houses specialising in insurance broking and intermediary systems has had a profound effect. Only Misys and MCS are truly independent and even Misys is expanding into noninsurance software markets and may well sell its insurance broking systems division.

The combination of networks and software can provide a massive competitive edge. For example, Policy Master's idea of giving £750,000 in technology grants is the first stage in implementing the products and services being developed with Policy Master's Validated Business System Initiative, which has the backing of most of the leading insurance companies. The network provides EDI between the broker and the insurer, and electronic mail and interactive insurer mainframe services. The network is geared to enable Policy Master to establish the largest number of networked insurance brokers by 1990 and to deliver products that Policy Master has developed with a number of insurers. Furthermore, IBM has appointed Policy Master the authorised dealer for the IBM 6150 and the AIX. Insurance companies will increasingly invest in systems and communications technology in support of their increasingly pan-European business operations.

Expenditures for software by the insurance industry are expected to grow at approximately a 20% CAGR over the next five years. Many insurance companies are handling their own information processing requirements in-house through IS departments, and as a result IS departments purchase applications when the available products meet their requirements. The types of industry-specific application software products available to the insurance industry are extensive. Products are available that handle most types of policies, claims administration, billing, client profiling, actuarial and investment analysis, decision support and management reporting.

Within the insurance industry, expenditures for microcomputer applications will grow faster than expenditures for mainframe and minicomputer applications or any other type of information service. The information-intensiveness of insurance has resulted in a very high penetration by microcomputers. For example, laptop computers are used by agents to provide claim and policy information, whilst databases containing actuarial information can be downloaded to these microcomputers so that a policy can be generated on-the-spot during a sales call.

Exhibit 15

Key Vendor Opportunities

- Professional services
- Systems integration
- Network services
- AI/Expert systems
- Productivity tools

In conclusion, INPUT believes technology will be directly linked to capturing further market share—the focus will be on sales and marketing information systems and customer monitoring to exploit cross-selling opportunities to the full. An effective presence in the corporate market will be impossible without much greater use of technology; in the life and nonlife sectors, the role of transaction processing systems, for example, will be a key determinant of the ability to participate.

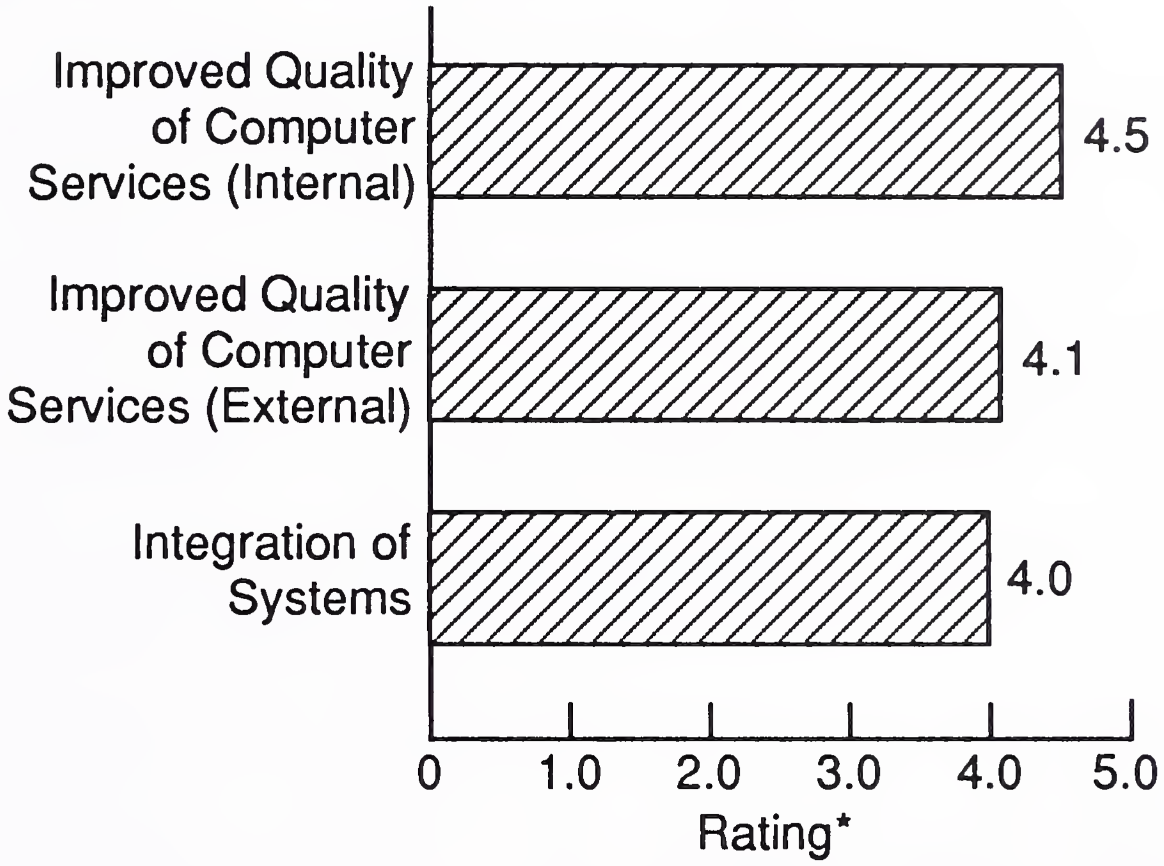
In the relatively undeveloped markets of Southern Europe, turnkey systems and professional services will show high growth over the forecast period as microcomputer systems for agents and brokers are made available and custom software development is required to supplement internal IS resources. Information technology, imaginatively used, can be a powerful ally in insurance companies' efforts to cope with the volatility that has shaken the industry over the past decade.

Greater expenditure will be devoted to all aspects of technological implementation. There will be increased investment in high-calibre systems personnel, as well as demand for professional services. Insurance companies will continue to devote much of their attention to internal use of technology and will promote productivity improvements and cost containment, if not reduction.

Insurance brokers will be increasing targets for improved automation, whether through more-sophisticated distributed processing systems or through automation of a wide range of clerical functions, possibly including fully automated branches and developments in new fields of application (such as expert systems and artificial intelligence).

Exhibit 16

Insurance Companies' Priorities in Software and Services



*1 = unimportant, 5 = very important.

End-user requirements will also change. If competitors are offering new products and services, end-user departments will require systems to provide the same types of products and services. Enhancements to existing systems and development of new systems will inevitably have an adverse effect on the IS budget. Furthermore, there is a chronic backlog of planned application development projects within insurance.

There are two key objectives for IS managers (sceptics might suggest that these objectives are mutually exclusive):

- To provide end users with the services they require in time and at a reasonable cost
- To reduce the backlog of application development projects and maintain ongoing operations

To meet user requirements, new systems have to be developed and/or old systems have to be enhanced or expanded. Projects identified by respondents for 1990 include developing systems that speed the delivery of actuarial, policy and financial information to end users as well as to customers. Integrating systems is also a key priority after the wave of acquisitions across Western Europe. Integration leads to a more efficient use of information.

Exhibit 17

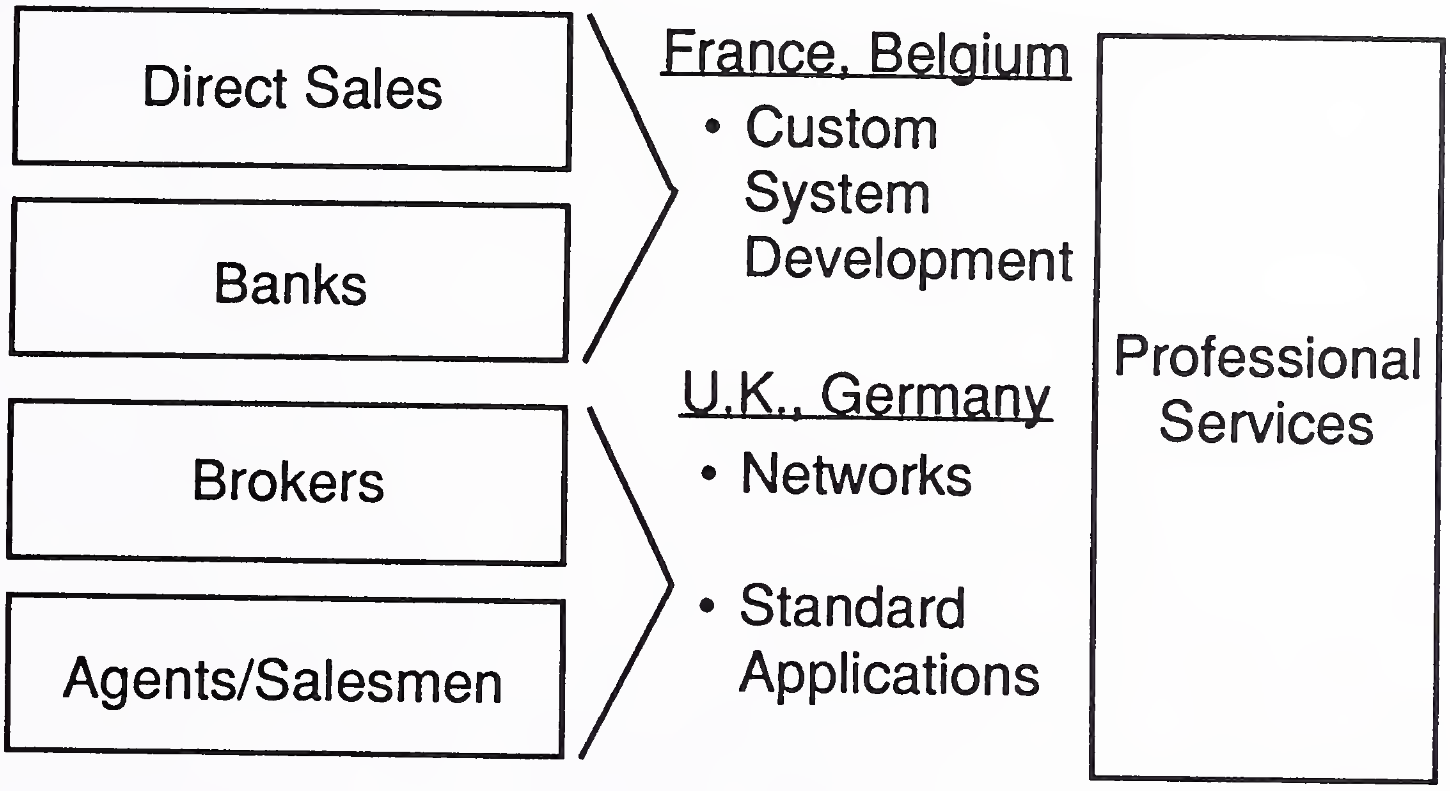
New Technology Planned

- Database management systems
- Decision support systems
- EDI interface
- Image processing

Decentralisation of some IS functions is occurring in some organisations, whilst the new technologies and applications planned by insurance companies, coupled with the external pressures to become more competitive, quickly translate into a considerable opportunity for software and services vendors with expertise in systems and network integration, software products and turnkey systems. Database management and decision support systems are already being developed by the leading insurance companies, whilst EDI and image processing are likely to represent a large proportion of IS activity into the 1990s.

Exhibit 18

Insurance Companies' Systems Needs



The fragmented nature of the insurance industry means that the software and services market has distinct national characteristics, with France and Belgium concentrating on major in-house developments and the U.K. and Germany looking more towards networks, packaged solutions and turnkey solutions. The strategic positioning occurring in Europe has ensured that insurance companies will need to invest in systems, networks and software as a result of competitive pressures, forcing them to sacrifice short-term earnings in favour of strategic investment decisions in their pursuit of diversification. This, for software and services vendors, is the key challenge. The challenge of systems needs is summarised in Exhibit 18. A major opportunity for professional services companies.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England. Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

Headquarters
1280 Villa Street
Mountain View, CA 94041-1194
(415) 961-3300
Telex 171407 Fax (415) 961-3966

New York
959 Route 46 East, Suite 201
Parsippany, NJ 07054
(201) 299-6999
Telex 134630 Fax (201) 263-8341

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
(703) 847-6870 Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
(071) 493-9335
Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
(33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
(03) 864-0531 Fax (03) 864-4114

October 1990
MAPE Vol. I, No. 5

Route to:

INPUT LIBRARY

INPUT® Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Market Analysis and Forecast for Western Europe Distribution Industry Sector

Across Europe, user expenditure on specific software and services in the distribution sector is estimated to reach $3.2 billion in 1990, growing at a compound annual growth rate (CAGR) of 17% to achieve $7.0 billion by 1995. INPUT's growth forecasts include estimated inflation rates.

The distribution market sector is defined as wholesale and retail businesses within the food, hospitality, merchandise and automotive subsectors. Excluded are other activities related to the supply chain, primarily transport and EFT (electronic funds transfer). EFT is handled as a topic within other studies in both the Market Analysis Programme for the Computer Software & Services Industry and the Network Services Programme.

User expenditures on software and services included in the analysis are those which are unique to the distribution industry sector. Omitted are user expenditures on:

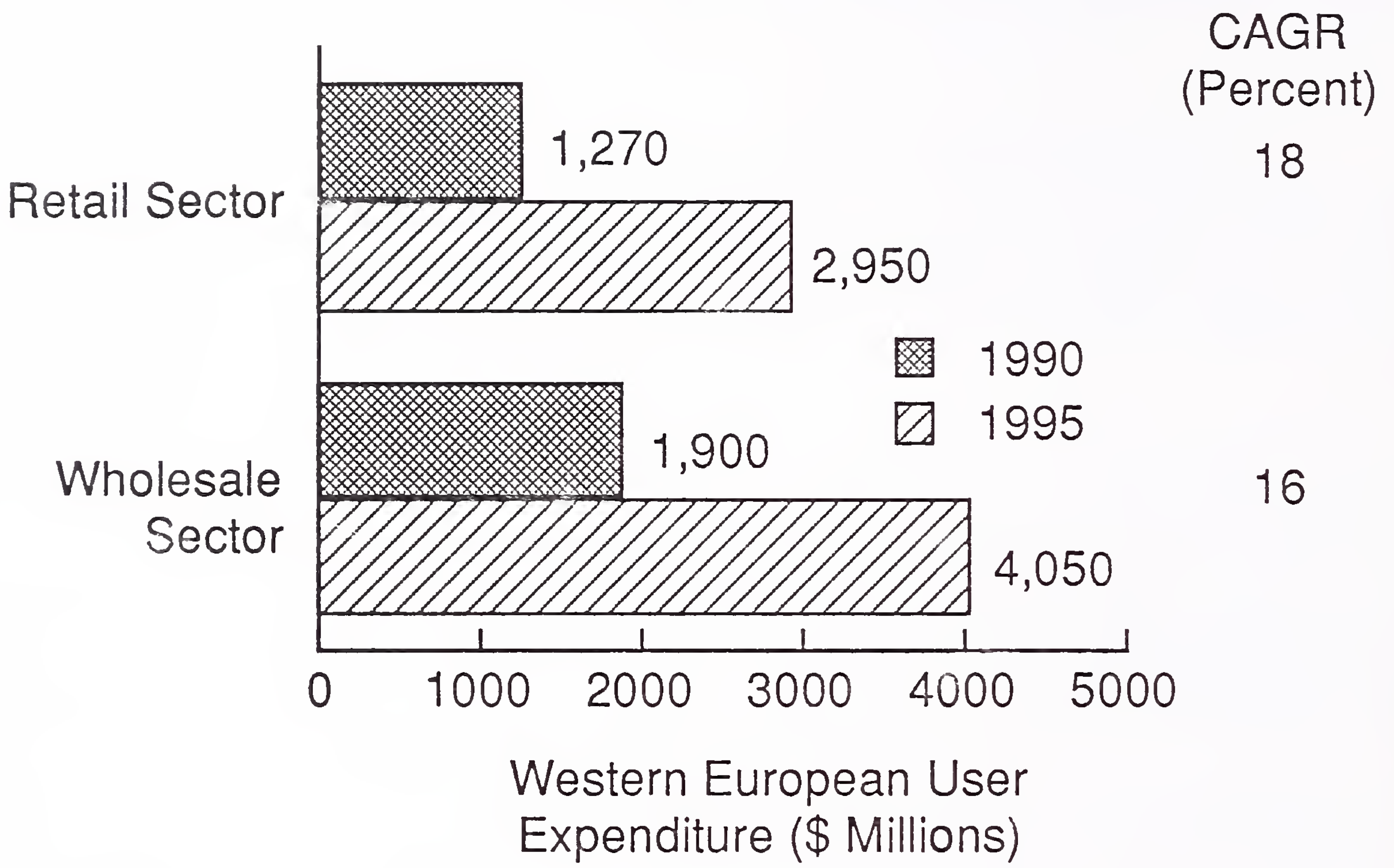
- systems software such as operating systems, databases, languages and development tools
- related professional services, including product training and technical consultancy
- generic network services and on-line databases
- cross-industry processing services such as transaction services or facilities management
- cross-industry applications such as accounting systems and office automation software products

This bulletin contains:

- Preliminary data on market size and forecast in the retail and wholesale sectors
- Preliminary data on market size and forecast by major European country market
- The market share of the top 20 vendors in retail and wholesale
- A market forecast by delivery mode (e.g., application software, turnkey systems, etc.)

Exhibit 1

Distribution Sector Industry-Specific Software and Services Market



As illustrated in Exhibit 1, the wholesale sector is larger than the retail sector across Europe. The reverse is true in the U.K., where retail business exceeds wholesale. As scanning POS (point of sale) systems spread, the mass of information such systems can capture stimulates retailers to play a stronger role in managing consumer demand for their products. In the past this has traditionally been the role of the manufacturer or importer of products.

Encouraged by sophisticated information systems, this growing role for the retailer is creating a distribution supply chain where the retailer—and to an extent the wholesaler—creates market pull, rather than just the manufacturer creating market push. Examples of this can be seen on a European scale with new alliances and takeovers amongst major retailers. For example, the AMS (Associated Marketing Services) consortium is a marketing and information-sharing alliance between a group of major supermarket chains from nine European countries.

Among information systems vendors there is strong interest in integrating distributed supply chain systems, to provide clients' management with a total view of the logistics of their business. Among software vendors there is an equally strong interest in offering more sophisticated applications that can be readily integrated with existing systems.

Exhibit 2

Distribution Sector by Country

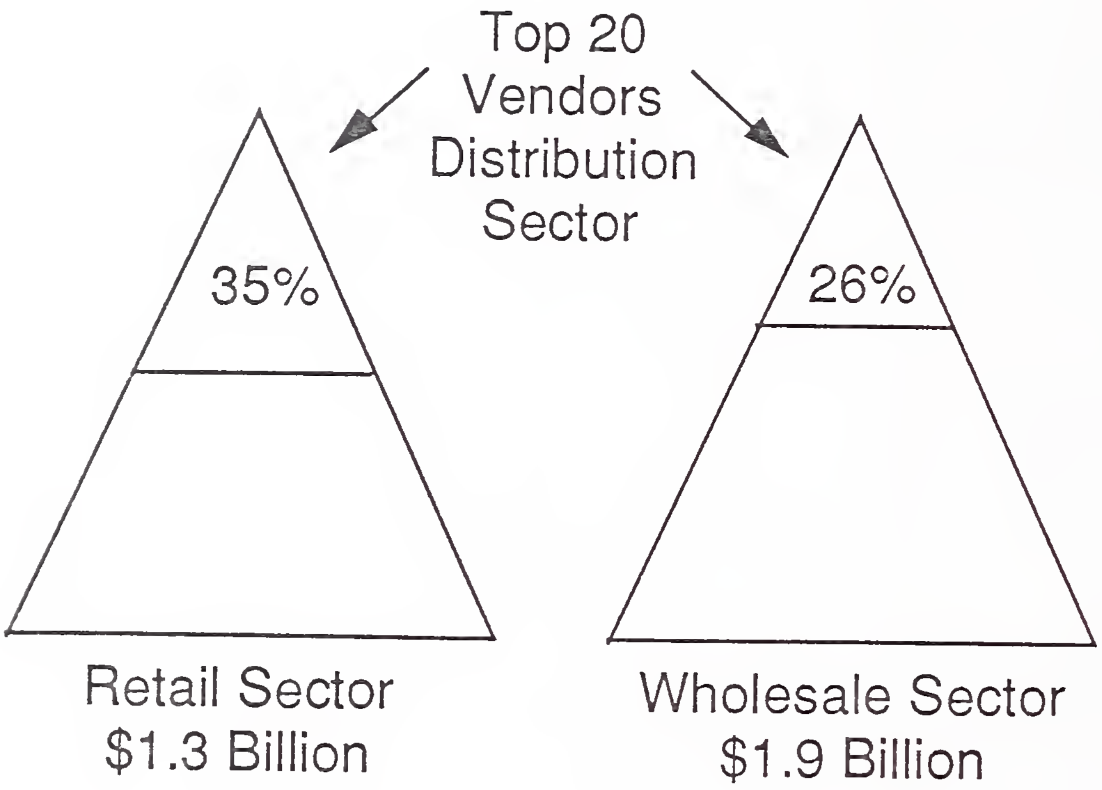
	Market Forecast ($ Millions)			
Country	1989	1990	1990-1995 CAGR (Percent)	1995
France	605	705	17	1,535
Germany	650	770	19	1,820
United Kingdom	710	820	16	1,755
Italy	240	280	17	630
Spain	85	100	21	265
Rest of Europe	435	500	15	995
Total	2,725	3,175	17	7,000

Exhibit 2 shows the differences between major country markets. Germany is seen as the most promising market by major vendors, as their multinational clients look for new opportunities in Eastern Europe.

Spain is growing most rapidly (though from a much smaller base) as its membership in the European Community helps to stimulate trade both within the country and across its borders. The U.K. is expected to grow least rapidly in real terms.

Exhibit 3

Distribution Industry Software and Service Top Vendor Market Share, 1989



The retail industry subsector for software and services vendors is led by the specialist PoS suppliers. However, very few companies cover the whole industry. As shown in Exhibit 3, the top 20 vendors of industry-specific software and services in the distribution sector account for about 35% of the total retail market in Europe.

Systems and professional services vendors are all looking to broaden their portfolio of applications and to establish or maintain market leadership within the many niche markets in this sector. Market segmentation is apparent in two dimensions:

- Style of organisation—e.g., supermarket, multiple, department store, cash-and-carry
- Type of products—e.g., food, oils, textiles, shoes

Exhibit 4

Top Software and Services Vendor Rankings and Market Shares Western Europe Distribution Sector

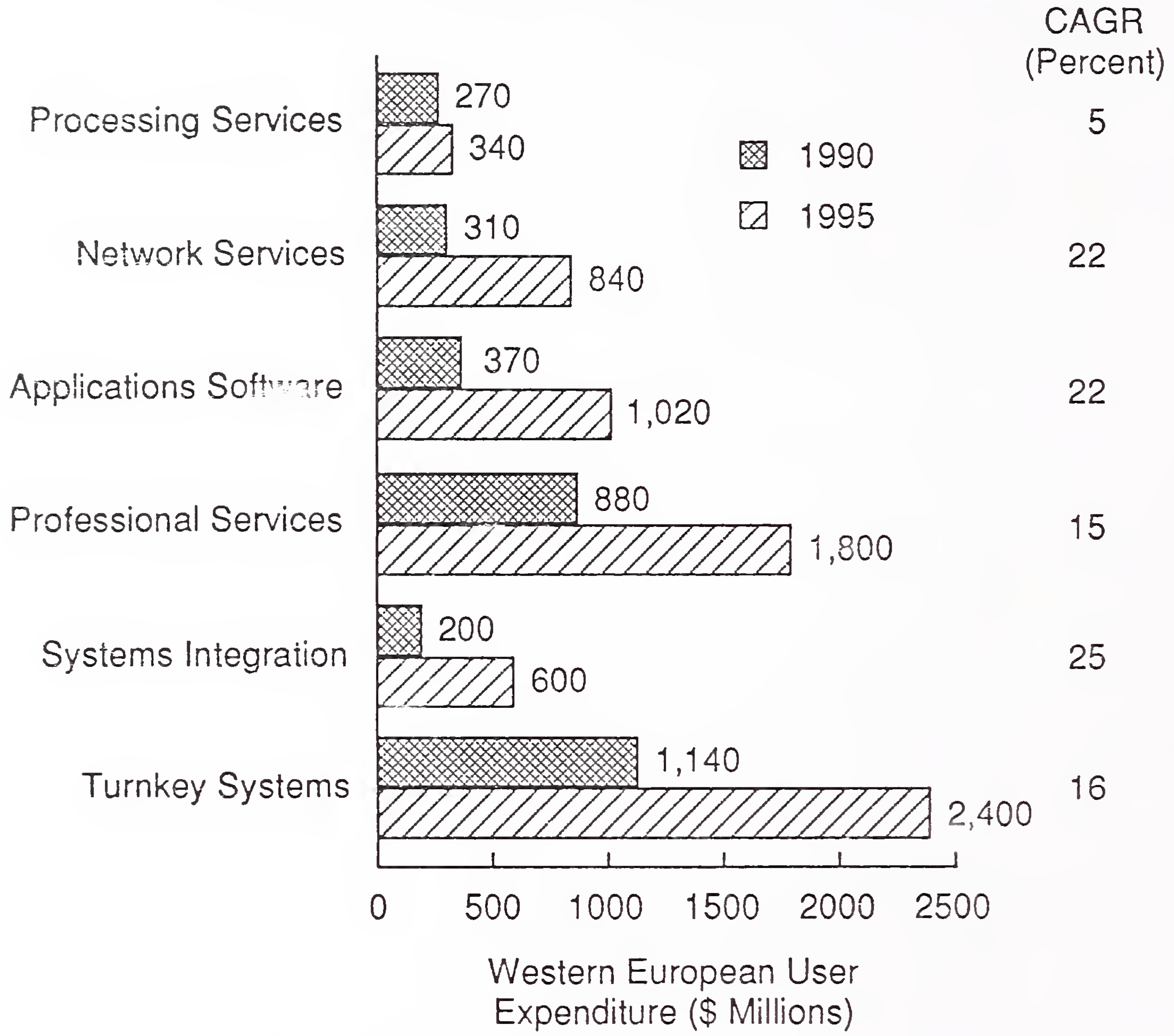
Company	Rank	Market Share (Percent)	Estimated Revenues ($ Millions)
IBM	1	11.0	300
Nixdorf	2	3.5	95
GSI	3	2.0	55
CGS	4	1.9	50
NCR	5	1.7	45
Olivetti	6	1.1	30
Bull	7 =	0.9	25
ICL	7 =	0.9	25
Sema	9 =	0.7	20
Sligos	9 =	0.7	20
Digital	11	0.7	18
Andersen Consulting	12 =	0.6	17
GEIS	12 =	0.6	17
Thorn EMI	14	0.6	16
SAP	15	0.6	15
Other		72.6	1,977
Total		100.0	2,725

Note: Cross-industry and generic software and services revenues are omitted from these industry-specific distribution sector estimates.

The wholesale industry subsector is even more fragmented than retail. The top 20 in this case represent only one-quarter of the total market for industry-specific software and services. At issue is management of the physical distribution of products, components and raw materials. Competition is keen, with strong margin pressure from retailers, manufacturers and transport contractors. In addition, as retailers and shipping companies grow stronger, the wholesale function is being absorbed into their business function, forcing wholesalers to add greater value and use more sophisticated business techniques.

Exhibit 5

Market Forecast by Delivery Mode for Western Europe—Distribution Sector



Large wholesalers and retailers have significant investments in mainframe systems, but at store, warehouse and headquarters level there is a strong trend to physically distributed minicomputer and PC or workstation systems.

Turnkey systems is the largest delivery mode in the distribution sector, reflecting the ambitions of wholesalers and retailers in this marketing-led industry, always looking for customised information system capabilities to give them a competitive edge. Users are finding the costs of customised solutions too high, so this need is now giving way to requirements for lower-cost—often turnkey—systems solutions using more extensive software application packages.

The most significant vendor trend is a move to system downsizing as they search for more market by selling to smaller businesses and subsidiaries. Vendors are re-engineering systems down from mainframe to midrange, and from midrange to PC or workstation platforms. This is leading to more applications packages being sold and a reduction in the bespoke development aspect of turnkey systems.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England. Tel. (071) 493 9335, Fax (071) 629 0179

October 1990
MAPE Vol. I, No. 7

Route to:

INPUT Research Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

Preliminary Market Forecast for Western European Discrete Manufacturing Sector

User expenditures on industry-specific software and services in the Western European discrete manufacturing sector are estimated to reach $8 billion in 1990. Thereafter this sector is forecast to grow at a compound annual growth rate (CAGR) of 18%, reaching $18 billion in 1995. INPUT's growth forecasts include estimated inflation rates.

The discrete manufacturing sector is defined as businesses involved in

- Metal manufacturing
- Mechanical engineering
- Electrical engineering
- Instrument engineering
- Textiles
- Leather or leather goods
- Furniture manufacturing
- Printing and publishing

The user expenditures on software and services that are included in the analysis are those unique to the distribution industry sector. Omitted are the user expenditures on

- Systems software, such as operating systems, databases, languages and development tools
- Related professional services including product training and technical consultancy
- Generic network services and on-line databases
- Cross-industry processing services such as transaction services and facilities management
- Cross-industry applications such as accounting systems and office automation software products.

This bulletin contains

- Market forecasts for the discrete manufacturing sector in the major countries of Western Europe
- Market forecasts by delivery mode—for example software products, turnkey systems, etc.
- The market shares of the leading 20 vendors in the discrete manufacturing sector

Exhibit 1

Western European Discrete Manufacturing Sector Software and Services Market Forecast by Country

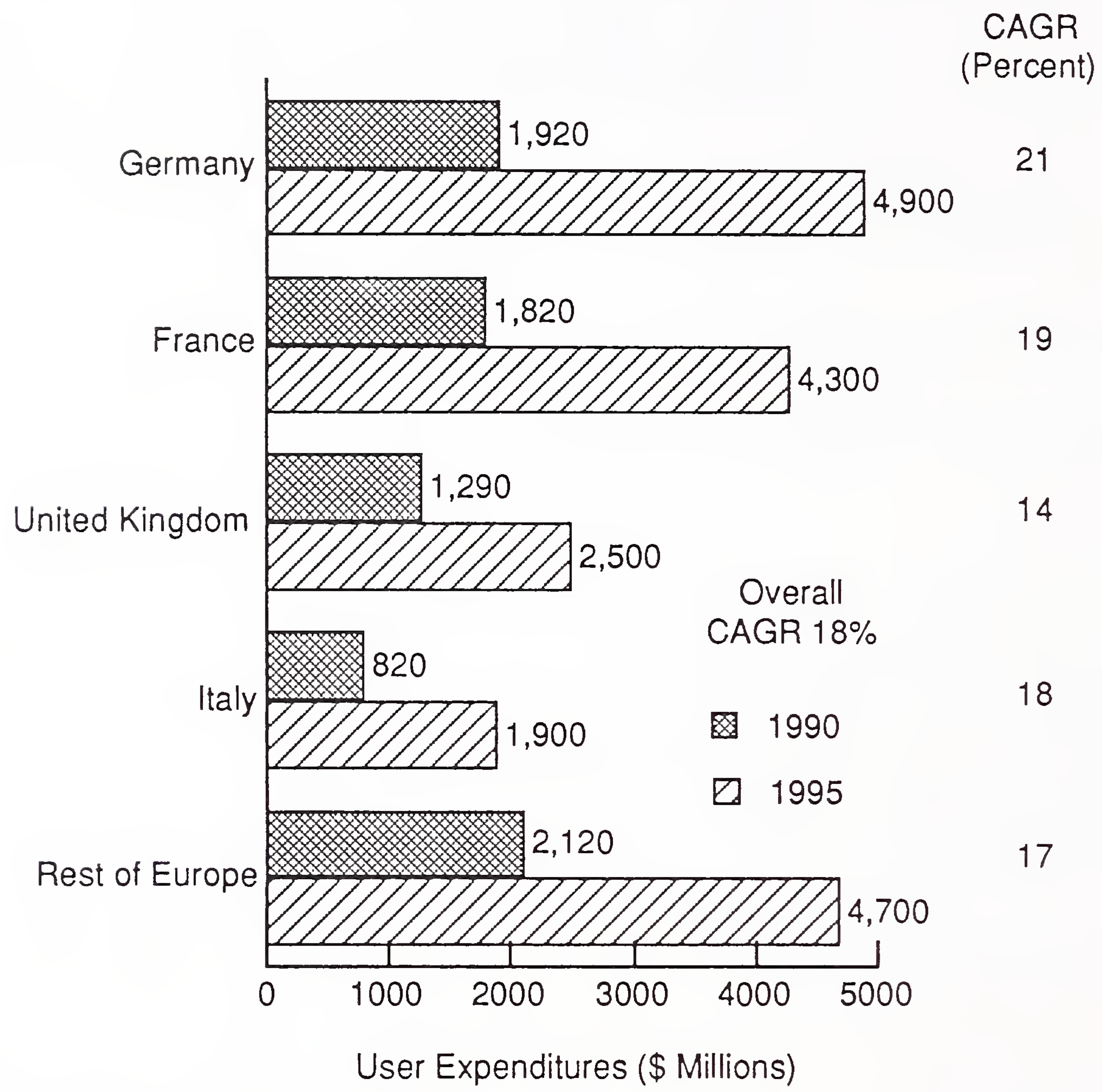


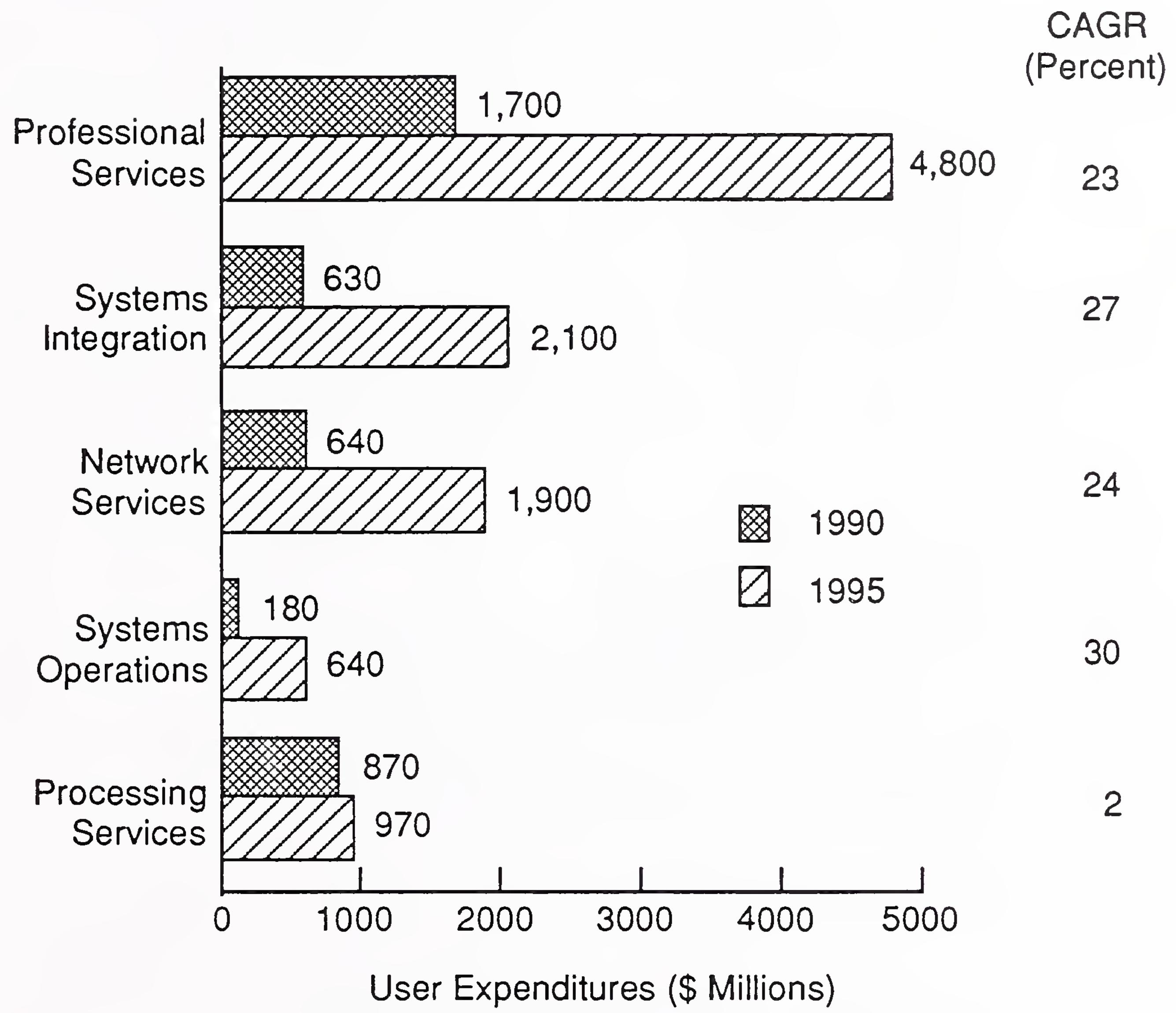
Exhibit 1 shows the relative sizes and growth rates of the software and services markets in the discrete manufacturing sector within the major countries.

West Germany is widely recognised as having the strongest discrete manufacturing industry in Europe, which is reflected in the current size of its software and services market. At the same time, the country is planning considerable investment in industry in line with German unification. Accordingly, a comparatively high growth rate in software and services is expected over the next five years. At the other extreme, the discrete manufacturing sector in the United Kingdom is currently depressed by high interest rates, and information systems projects in this sector are being delayed. Consequently, comparatively low growth is expected over the forecast period. France and Italy show growth rates between these extremes.

By subsector, the highest growth rates are anticipated in the automotive and aerospace industries, two of the traditional leaders in the use of process and product technology.

Exhibit 2

Western European Discrete Manufacturing Sector Software and Services Market Forecast by Delivery Mode, 1990-1995



Exhibits 2 and 3 show the software and services market in the discrete manufacturing sector by delivery mode.

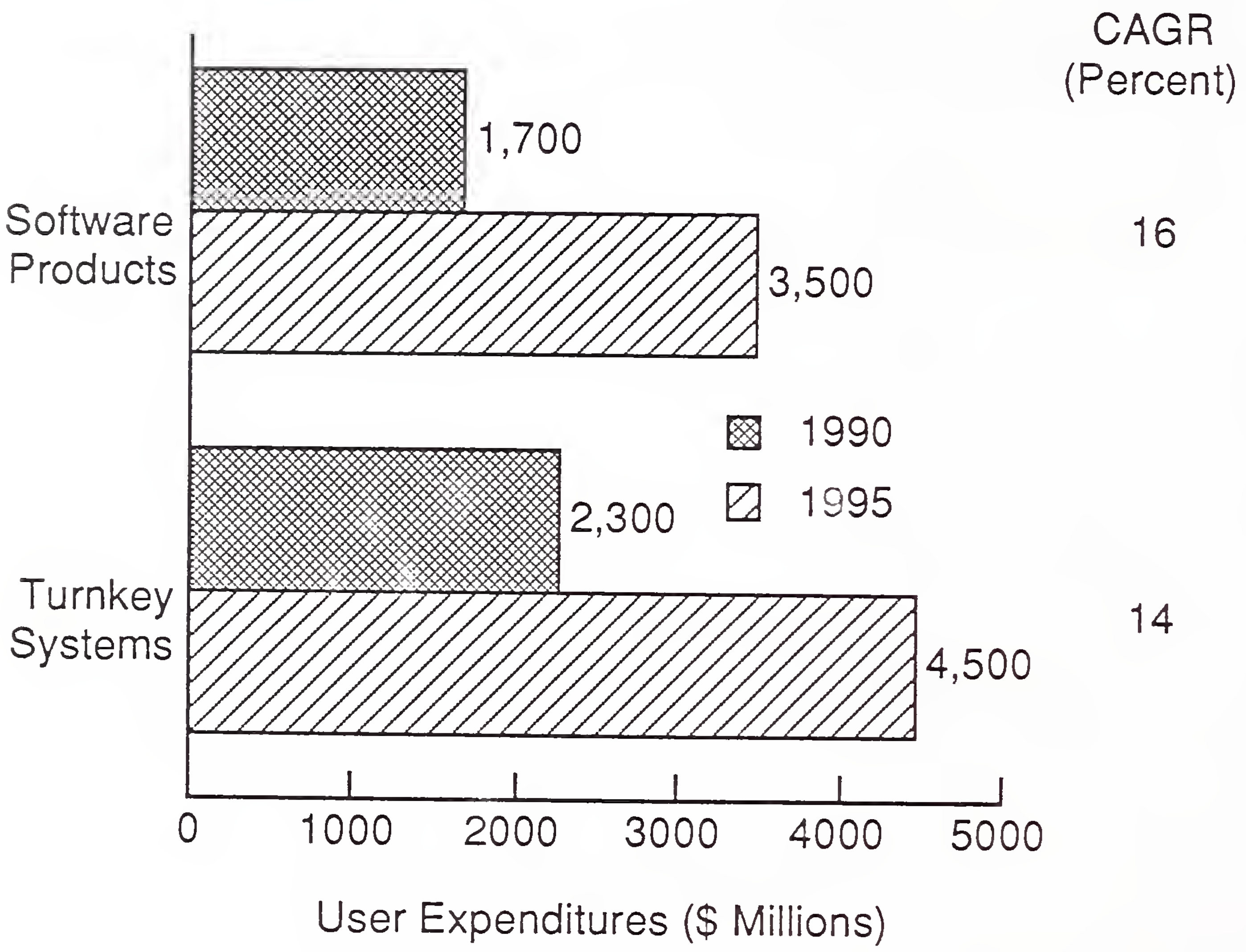
The fastest growing delivery modes are forecast to be systems integration and professional services. These modes are driven by the discrete manufacturing sector's need to integrate the major application areas—such as computer-aided design (CAD), production management and factory automation—into a single, accurate and up-to-date information system supporting both design and production activities.

Network services are forecast to grow rapidly, driven by the increasing use of EDI. EDI is currently used to a limited extent by many companies in the discrete manufacturing sector. There is considerable potential to expand its use in terms of the number of suppliers and customers linked to a manufacturer, and also in terms of the range of document types exchanged through EDI.

Systems operations will also show strong growth in the discrete manufacturing sector, particularly in France and the United Kingdom. The information systems departments of discrete manufacturing companies are feeling cost reduction pressures. Consequently, there will in some instances be a decrease in user information systems staff and a shift in favour of systems operations.

Exhibit 3

Western European Discrete Manufacturing Sector Software and Services Market Forecast by Delivery Mode, 1990-1995



Turnkey systems and software products are forecast to show comparatively slower growth, as the major application areas such as production management and, to a lesser extent, CAD become replacement markets.

CAD/CAM is still a growing market, but much of the growth is coming from the microcomputer-based systems end of the market. At the workstation level, the cost per seat will continue to fall. To counter these trends, the traditional CAD vendors such as IBM, Intergraph and Prime/Computervision have introduced microcomputer-based products themselves, and are endeavouring to widen the use of CAD within discrete manufacturing organisations. In particular, they are eager to expand CAD capabilities from a drafting tool into a means of handling prototype evaluation and technical documentation. Adoption of concurrent engineering techniques is seen as a key driver of CAD workstation sales.

Exhibit 4

Leading Vendors—Western Europe 1989

Rank	Company Name	Revenues $ Millions	Market Share %
1.	IBM	342	5.1
2.	Nixdorf	223	3.3
3.	Prime	182	2.7
4.	Intergraph	170	2.5
5.	CGS *	168	2.5
6.	Siemens	155	2.3
7.	Olivetti	91	1.4
8.	Sligos	83	1.2
9.	Istel	82	1.2
10.	Mannesmann IS	81	1.2
	Others	5,123	76.6
	Total	6,700	100.0

Software and services revenues from the discrete manufacturing sector within Western Europe.
Cross-industry and generic software and services revenues are excluded.

* Does not include Hoskyns' revenues.

Exhibit 4 shows the leading vendors of software and services to the discrete manufacturing sector in Western Europe.

The leading independent vendors are the two French vendors CGS and Sligos. These companies are also the most successful independent vendors in building pan-European operations to serve the discrete manufacturing sector. Both companies have made recent acquisitions that will enhance their lead in the discrete manufacturing sector: CGS with the purchase of Hoskyns, and Sligos with the acquisition of a majority stake in the Italian vendor Mesarteam.

The only dedicated application software product vendor among the leading twenty vendors is the German vendor SAP. SAP is also building a strong market share in Western Europe. The company already has a strong presence in Germany and France, and is starting to make an impact in the United Kingdom.

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
959 Route 46 East, Suite 201
Parsippany, NJ 07054
Tel. (201) 299-6999
Fax (201) 263-8341

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 864-0531 Fax (03) 864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England. Tel. (071) 493 9335, Fax (071) 629 0179

October 1990
MAPE Vol. I, No. 8
Route to:

INPUT LIBRARY

INPUT Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

The Five Stages of Information System Development in Distribution Companies

Information systems are spreading their influence to all corners of retail and wholesale businesses in west Europe. Just how far IT reaches within an organisation is a measure of the company's potential to exploit IT to the full in an increasingly competitive trading environment. In studying the market for software and services in this sector, INPUT has identified five stages of development of companies and markets.

In simple terms the stages are:

1. Automate
2. Integrate
3. Delegate
4. Communicate
5. Regulate

Few companies are concentrating their attention on stages four and five, even though it is here that they could expect to derive most profitable and competitive leverage from IT. Most are stuck at stage 1 and working hard to overcome the technical and organisational issues involved in solving stages 2 & 3.

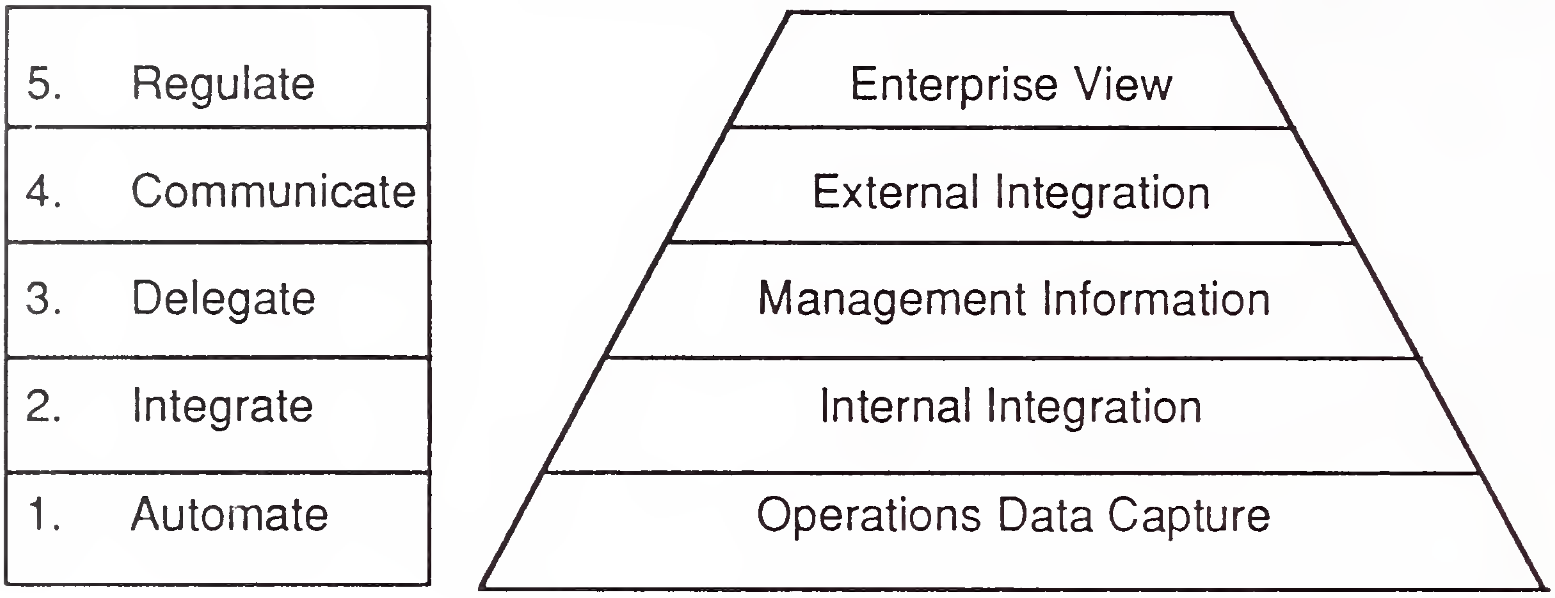
Two key technology standards are driving the development of information systems by providing huge increases in the bulk of accessible data—bar coding and electronic data interchange (EDI). Bar coding scanners already capture more consumer transaction information at large store check-outs than has been common in transaction-intensive banking environments. The use of bar coding on container and pallet shipments will be another step towards tighter distribution management. EDI is already making some headway in Europe, allowing trading partners to cut down paperwork and share more information.

Numerous applications and related services requirements spin out of the resulting revolution in retail and wholesale trading. The five stages provide another dimension of market segmentation with which vendors can position their software and service offerings in the fast-moving distribution industry sector. It is very apparent that although the major vendors are all talking about total supply chain systems, there is not a single distribution client that has achieved results across all five stages.

INPUT LIBRARY

Exhibit 1

The Five-Stage Analysis of Information Systems Development in Distribution



The INPUT analysis follows the evolution of systems in both large and small distribution organisations. It starts with the most fundamental uses of IT in business automation—the capture of operational information in various departments or sites around a company.

1. Automation Stage 1 answers the question, "What's been done?" It generally generates records of past activity within an area, such as sales, deliveries, stocks or accounts. Stage 1 should not be considered simple, though. The large majority of small and medium-size businesses are at, or have not even reached, this stage of development.

2. Integration The integration of these different functions in stage 2 offers a much more accurate picture of "Where are we now?" It may be merely the networking of several systems, or it may involve replacing some applications or databases to allow access between departments. This stage is often a move to regain centralised control of information flow.

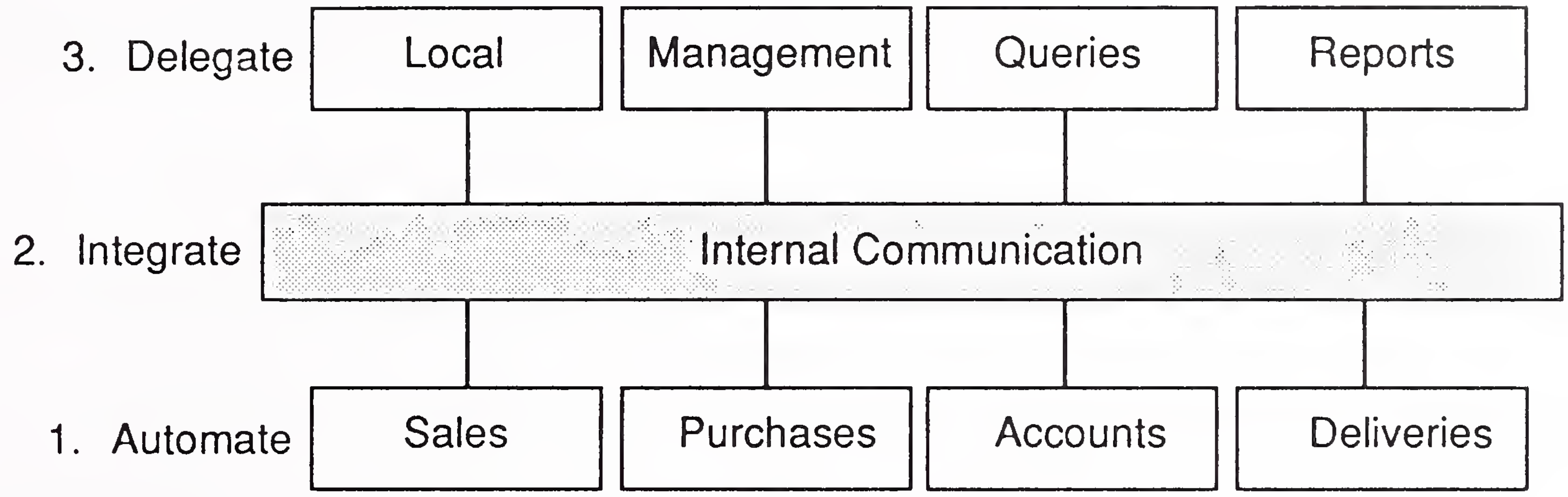
3. Delegation Having centralised, the next step is to decentralise! Local management information is a combination of asking regularly for a standard report and asking for a once-off question to be answered. This is more akin to asking "How are we doing?" At this stage companies feel they have a grip on their internal flow of information.

4. Communication Being in the distribution business means playing a role in the supply chain. Clearly, closer relations and connections with suppliers, customers, and bankers becomes essential as competitors improve their services and reduce costs. Stage 4 involves EDI and other computer links to trading partners, answering the question "What is best, and when?"

5. Regulation Some companies are now beginning to experiment with corporate IT systems that help them track trends, form plans, predict outcomes in complex consumer preferences and provide firmer direction for the business. This is stage 5, where the raw **data** has been converted to **information** and is now building up management's **knowledge** of how the business works and guidance on "Where are we going and how do we get there?"

Exhibit 2

Stages One, Two and Three—Local Internal Management Information



Stage 1. Automate—Operations (Data Capture)

To many vendors, this stage is their bread-and-butter business, while most of the other stages are part of the client's wish list. Application solutions are bought over a period of years to manage records of:

- Purchases
- Customer receipts
- Orders and invoices
- Payments and accounts
- Inventories
- Sales records
- Goods in/out
- Tax records

Recently many of these solutions have become available as part of PC-based electronic cash registers and scanning EPOS terminals for small retailers and cash-and-carry wholesalers. In larger organisations that already have all the basic applications, the stage 1 approach of individual pragmatic solutions continues with such applications as:

- Marketing
- Telemarketing
- Payroll/pensions
- Maintenance
- Catalogue layout
- Quality analysis
- Personnel
- Fleet management

Stage 2. Integration—Internal

In larger organisations, automation has usually centred on a headquarters DP system, commonly using applications written in-house over several years. The availability of distributed application solutions for different corners of the business, such as shops and warehouses, has led to islands of automation. To turn the information they contain into a more company-wide resource, these systems need integration across applications and across networks. The market-leading retailers and wholesalers have this process well in hand, though many still have significant gaps in the information flow. In particular, many are still totally dependent on stock checks, rather than sales records, to generate reordering purchase activity.

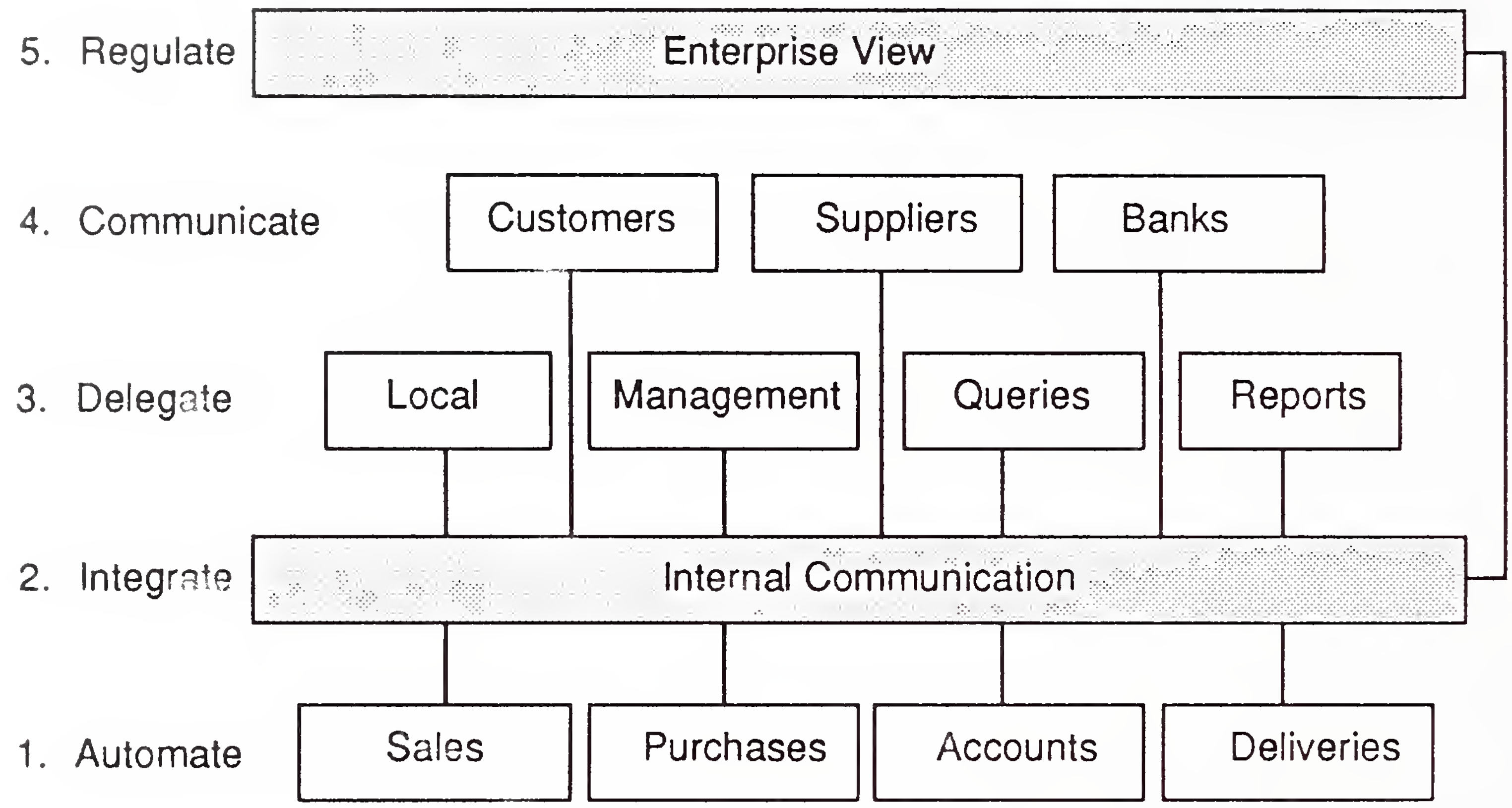
3. Delegate—Management Information

There is a noticeable trend, as business gets more complex and competitive, towards delegating more authority to local management. Store and warehouse managers need a composite view of the operational information on their part of the business. Profit centre management demands new levels of data manipulation to support local decisions on topics such as order quantities, supplier relations, deliveries, stock levels, staff training, productivity measures or special discounts. Most companies at stage 2 still control most of these issues centrally. But as mergers and alliances increase the concentration and scale of distribution companies, the need for local flexibility is seen as a natural next step. The quality of customer service and overall unit profitability are often seen as best managed locally. Direct profit management has attracted much attention as the industry struggles to develop accurate measures for profit by:

- Product Line
- Market
- Customer
- Outlet

Exhibit 3

Stages Four and Five—Trade Links, Forecasting and Planning



4. Communicate—Trade Links and External Integration

All the talk of "Total Supply Chain Systems" disguises the fact that in Western Europe EDI is still a little-used method of helping trading partners communicate. Many leading distribution companies do connect to their customers or suppliers, but most communication is achieved through direct, custom-programmed company-to-company links. All the benefits to be gained from eliminating paperwork, speeding the product flow, being paid on time and sharing market analyses are still generally just wish-list items.

Why isn't EDI moving faster? Everyone is waiting for the EDIFACT standards or waiting for customers to make a decision. Meanwhile the EDI service suppliers are pressing on, signing up customers on slightly older standards, but probably amounting to only about 3,000 companies in the whole distribution sector in Western Europe by mid-1990.

5. Regulation—The Enterprise View

The amount of data collected via POS, EFTPOS, EDI, and numerous other applications is quite extraordinary. Already major retailers capture more transactions daily than is commonplace in the high street banks. How to turn this data into useful information, and then how to use it to gain a fuller understanding of the business and its environment, is the issue exercising some leading European retailers. Senior executives seek IT support in regulating and directing their enterprises. A handful of companies are experimenting with modelling and forecasting applications, expert systems and executive information systems to assess such things as:

- Customer preferences
- Shelf space utilisation
- Price sensitivity
- Profit contributions

Most distribution companies are not simply at one specific stage along this development path, but the five-stage analysis is a useful tool for assessing a client's current status and future plans for software and services.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England. Tel. (071) 493 9335, Fax (071) 629 0179

November 1990
MAPE Vol. I, No. 9

Route to:

INPUT LIBRARY

INPUT® Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Revised Market Structure for 1990

In researching and forecasting the information services market, we are tracking a constantly moving target. As technology and business practices evolve, the structure of the market undergoes a parallel evolution. Although we try to base our definitions and market structure model on fundamental business and technical concepts so as to minimize the need for revisions, change is a fact of life in any technology-based market.

As part of the 1990 Market Analysis Program, INPUT has revised the market structure that we use to describe and forecast the information services industry. This Research Bulletin describes the changes made between the 1989 and 1990 programs, and recasts the overall 1989-1994 market forecast in the new structure.

Systems Operations—A New Delivery Mode

The most recent change to INPUT's market structure model was made in 1988. At that time, two new delivery modes were recognized:

- *Network Services* was extracted from *Processing Services*
- *Systems Integration* was extracted from *Professional Services*

At the same time, two different kinds of systems operations remained as submodes of Processing Services and Professional Services. In INPUT's definition, systems operations involves the operation and management of all or a significant part of the user's information systems functions under a long-term contract. The differences between the two submodes are as follows:

- *Systems Operations - Professional Services:* The vendor provides personnel to operate client-supplied equipment.
- *Systems Operations - Processing Services:* The vendor provides personnel, equipment and (optionally) facilities.

Although these distinctions were once reasonably clear, there has been a significant change in the definition of what constitutes systems operations, and systems operations vendors now provide a wide variety of services in support of existing information systems. In today's market, the vendor can plan, control, provide, operate, maintain and manage any or all components of the user's information systems (equipment, networks, systems and/or application software), either at the client's site or the vendor's site.

As a result of this market evolution, the earlier distinction between the two submodes has become less useful over the last several years—especially in the commercial market. Therefore, starting with the 1990 MAP program year, the Systems Operations submodes are being extracted from Processing Services and Professional Services and combined under a new, separate delivery mode called Systems Operations.

No other change has been made to the delivery mode definitions in the 1990 program, and the total forecast expenditures for these three newly-constituted delivery modes are identical to the total forecast expenditures of the two original modes before the breakout of Systems Operations. In addition, for 1990, the old processing and professional services submodes are retained intact as the two major categories of Systems Operations.

Industry Structure and Delivery Modes

Exhibit 1 shows the revised market structure for 1990. Exhibit 2 shows the final 1989 program forecast, revised to account for the new market structure.

Several of the delivery modes can be grouped into higher-level Service categories, based on the kind of problem the user needs to solve. These *Service Categories* are another new concept introduced in the 1990 MAP program. They are purely an *aggregation* of lower-level delivery mode data, and do not change the underlying delivery modes or industry structure.

The two new service categories are:

- *Business Application Solutions (BAS)* — prepackaged or standard solutions to common business applications. These applications can be either industry-specific (e.g., mortgage loan processing for a bank), cross-industry (e.g., payroll processing), or generic (e.g., utility timesharing). In general, BAS services involve minimal customization by the vendor, and allow the user to handle a specific business application without having to develop or acquire a custom system or system resources. The following delivery modes are included under BAS:

  - Applications Software Products
  - Turnkey Systems
  - Processing Services

- *Systems Management Services (SMS)* — services which assist users in developing systems or operating/managing the information systems function. Two key elements of SMS are the customization of the service to each individual user and/or project, and the potential for the vendor to assume significant responsibility for management of at least a portion of the user's information systems function. The following delivery modes are included under MSS:

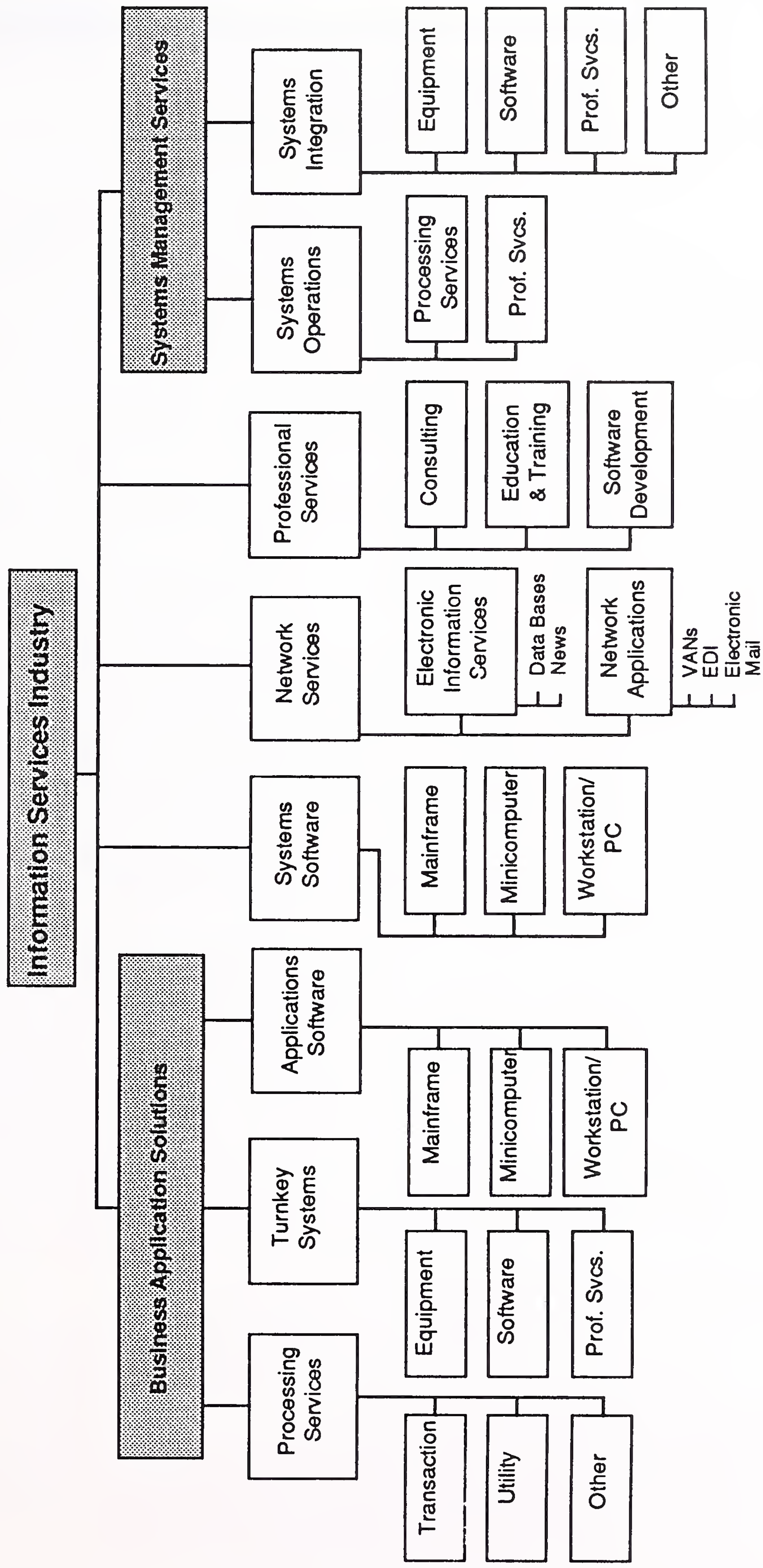
  - Systems Operations
  - Systems Integration

Each of the remaining three delivery modes represents a separate service category:

- Professional Services
- Network Services
- System Software Products

Exhibit 1

Information Services Industry Structure—1990



Source: INPUT

Exhibit 2

INPUT Information Services Market Forecast Western Europe, 1989-1994 (Adjusted to Treat Systems Operations as a Separate Delivery Mode)

	1989		1994		1989-1994 CAGR (Percent)
	($ Billions)	(Percent)	($ Billions)	(Percent)	
Processing Services	7.1	14	8.8	7	6
Systems Operations	0.8	1	2.1	1	21
Network Services	3.0	5	8.7	7	24
Software Products	14.3	28	34.8	29	20
- Applications Software	5.4	10	15.1	12	23
- Systems Software	8.9	17	19.7	16	17
Turnkey Systems	8.0	15	19.5	16	19
Systems Integration	1.9	3	6.1	5	26
Professional Services	15.0	29	37.8	32	20
Total	50.1	100	117.8	100	19

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England. Tel. (071) 493 9335, Fax (071) 629 0179

January 1991
MAPE Vol. II, No. 1

Route to:

INPUT LIBRARY

INPUT® Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Preliminary Market Forecast for Western European Process Manufacturing Sector

User expenditure on industry-specific software and services in the Western European process manufacturing sector are estimated to reach $3.3 billion in 1990. Thereafter, this sector is forecast to grow at a compound annual growth rate (CAGR) of 20%, reaching $8.1 billion in 1995. INPUT's growth forecasts include estimated inflation rates.

The process manufacturing sector is defined as businesses involved in:

- Food, drink, and tobacco production
- The chemical industry
- Extraction of petroleum and natural gas
- Mineral oil refining
- The timber industry
- Manufacturing paper and paper products
- The man-made fibres industry
- Processing of rubber and plastics
- Extraction and briquetting of solid fuels
- Extraction and processing of other non-energy producing minerals

The user expenditures on software and services that are included in the analysis are unique to the process manufacturing industry sector. Omitted are user expenditures on:

- Systems software, such as operating systems, databases, languages and development tools
- Related professional services, including product training and technical consultancy
- Generic network services and on-line databases
- Cross-industry processing services such as transaction services
- Cross-industry applications such as accounting systems and office automation software products

This bulletin contains:

- Market forecasts for the process manufacturing sector in the major countries of Western Europe
- Market forecasts by delivery mode—for example, software products, turnkey systems, etc.
- The market shares of the leading 10 vendors in the process manufacturing sector

Exhibit 1

Western European Process Manufacturing Sector Software and Services Market Forecast by Country

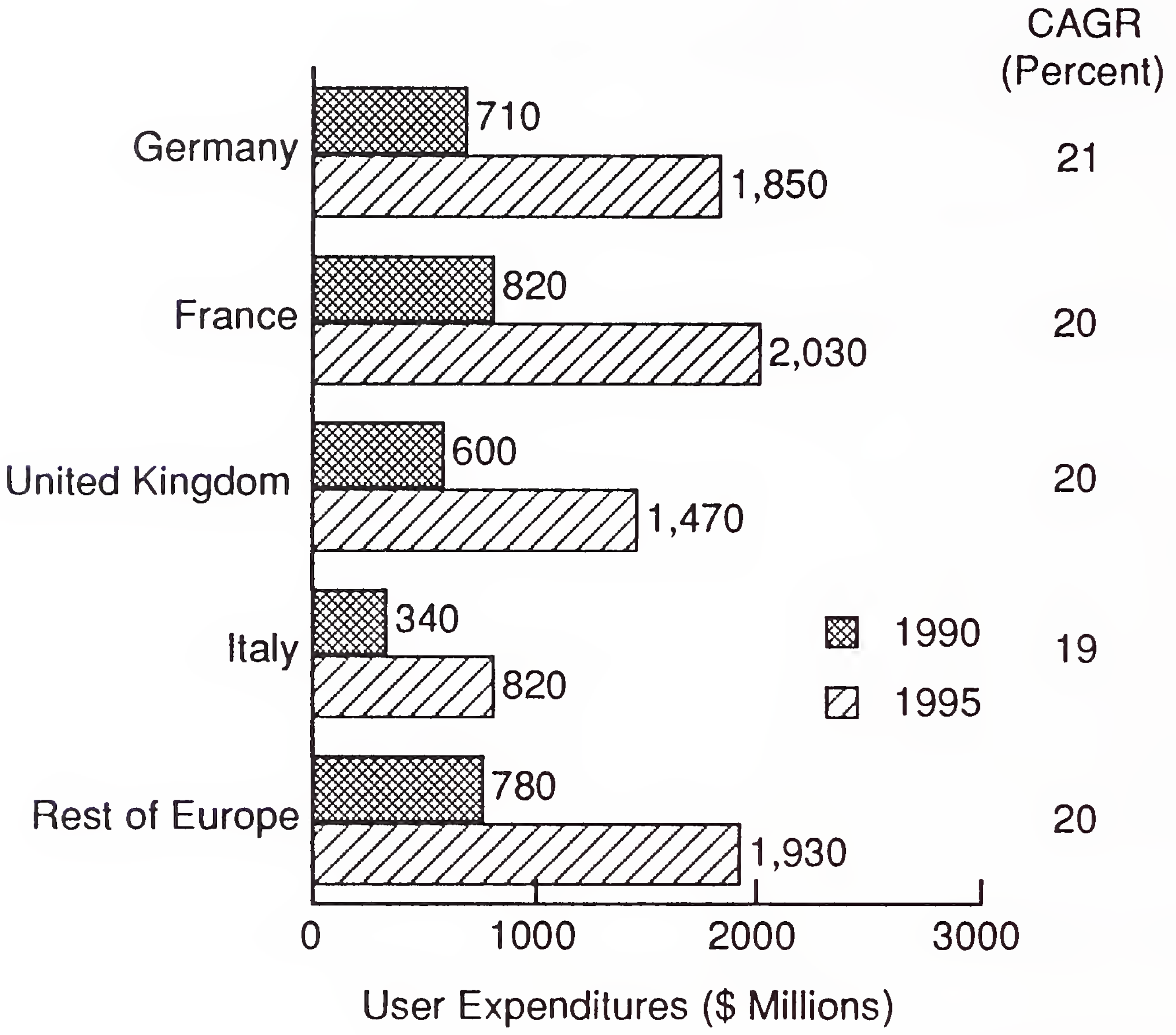


Exhibit 1 shows the sizes and growth rates of the software and services markets in the process manufacturing sector within the major countries.

The relationships between the national markets for software and services in the process manufacturing sector show a number of contrasts from those for the discrete manufacturing sector.

Firstly, the largest national market is France rather than Germany. Secondly, though Germany is the fastest growing national market and is expected to ultimately become the largest market in Western Europe, growth rates are less polarised in the process manufacturing sector than was the case in the discrete manufacturing sector. This is largely because the major subsectors contributing to growth in the software and services market, such as pharmaceuticals and food and beverages, are comparatively recession-proof. In addition, the United Kingdom, which is showing the worst signs of recession, is less dependent on upstream petrochemicals than countries such as France and Italy, and the North Sea oil production sector can only benefit from a prolonged increase in oil prices.

Exhibit 2

Western European Process Manufacturing Sector Software and Services Market Forecast by Delivery Mode, 1990-1995

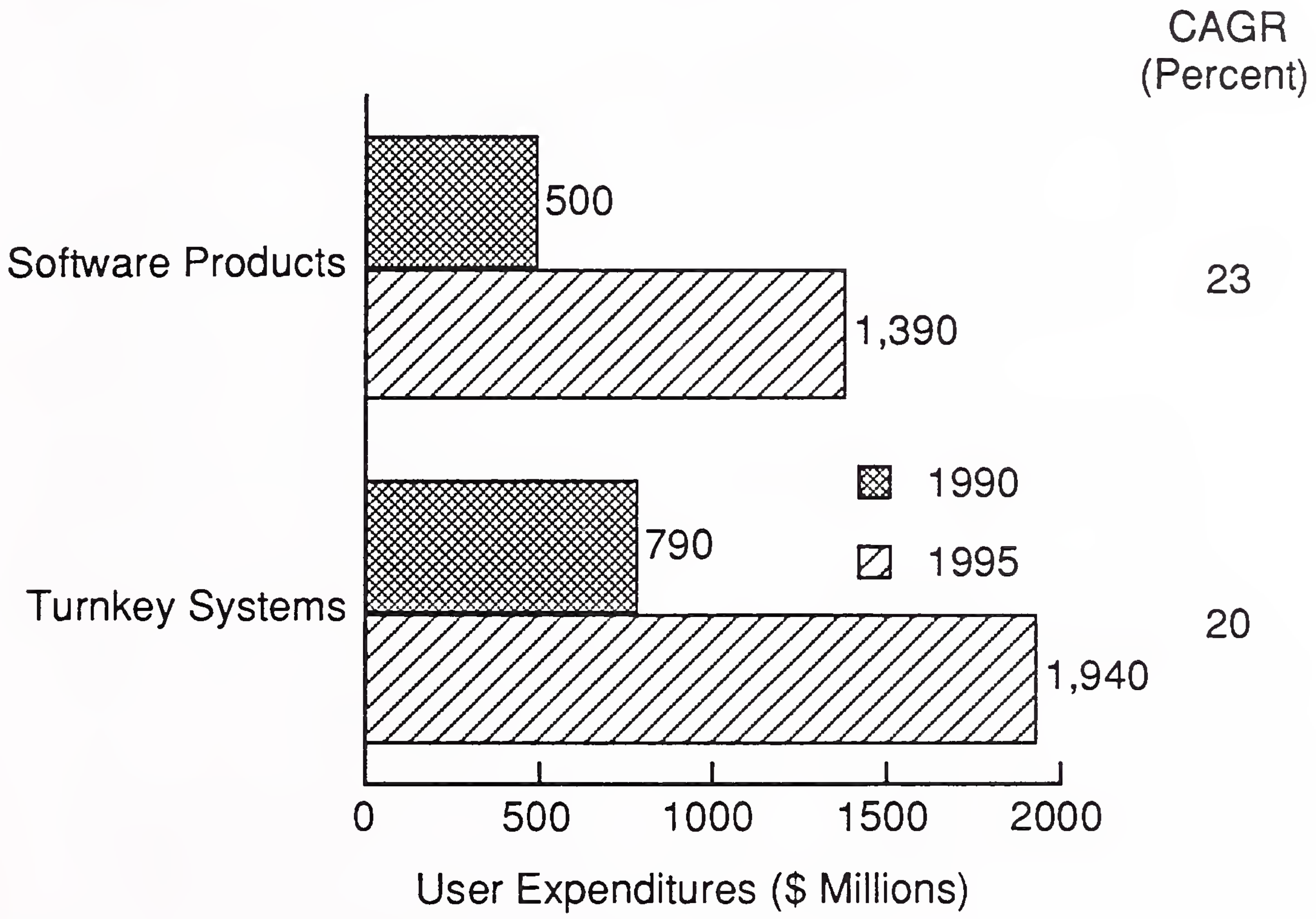


Exhibit 2 shows the strong growth in the application software product and turnkey systems markets, fuelled by users' increasing acceptance of industry-specific applications packages. The application showing the highest level of demand is production management, and other important application areas include:

- Supervisory control and data acquisition (SCADA)
- Production supervision and control
- Integrated quality management systems (including in-line quality testing).

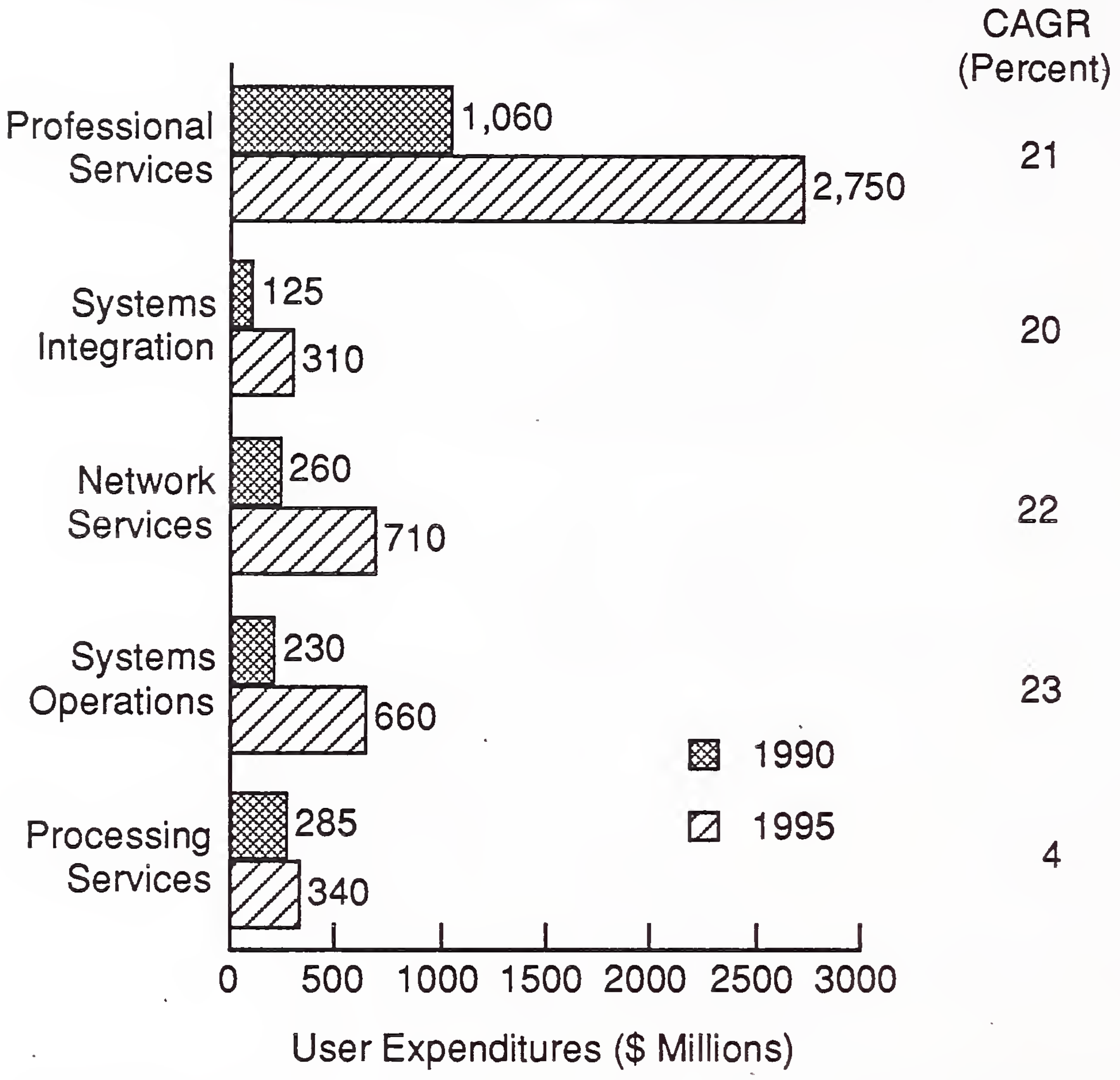
Until recently, production management systems in the process manufacturing sector were typically developed in-house by users. This now seems to be a thing of the past. Even so, in some countries there may still be a small lag before this trend becomes established and users recognise the suitability of the packages now being developed for their industry.

This change in the market has been recognised by the equipment vendors and the traditional production management software product vendors. During 1990, many of these vendors—for example, ASK—announced products for the process manufacturing sector, and many more vendors are likely to enter the market in 1991. This is leading to intensified competition.

At present, many of the production management systems being installed are centralised systems, but over the next few years there will be an increasing trend

Exhibit 3

Western European Process Manufacturing Sector Software and Services Market Forecast by Delivery Mode 1990-1995



towards distributed systems as the technology becomes both available and proven.

The process manufacturing sector is increasingly using external vendors for consultancy and for integrating the various application areas.

However, although some companies are planning to integrate their systems in the short term, process manufacturing companies are typically expecting to link their production management and process control systems in two to five years. Integration will be a major benefit to users in improving their responsiveness to their customers, by providing them with up-to-date information on production achievements. It will also greatly assist them in achieving high levels of quality and in demonstrating their control of consistent quality levels.

In the process manufacturing sector, there is little demand for electronic data interchange between manufacturers and suppliers, and even between manufacturers and wholesalers. The major driving force tends to be the major retailers. However, some companies have found that having established electronic data interchange links with major retailers, there has been a comparatively low take-up of the service.

Exhibit 4

Leading Vendors—Western Europe, 1989

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	IBM	6.1	165
2	Nixdorf	3.5	95
3	CGS	2.7	72
4	Siemens	2.5	67
5	Bull	2.2	59
6	SD-Scicon	2.1	58
7	Unisys	2.1	58
8	Sligos	2.0	55
9	Prime	1.9	52
10	Sema Group	1.9	52
	Others	73.0	1,967
	Total	100.0	2,700

Industry-specific revenues only. Cross-industry and generic software and services revenues are excluded.

Although not to the same extent as in the discrete manufacturing sector, the process manufacturing sector has its own cost pressures. The subsectors particularly affected in the process manufacturing sector are the low-value-added businesses such as petrochemicals, and the processing of rubber, plastics, and man-made fibres. These are the sectors most susceptible to use of systems operations.

Equipment vendors figure prominently in the process manufacturing sector, and have recently been very actively positioning themselves for the new wave of activity that is beginning in the process manufacturing sector.

The process manufacturing sector has traditionally been an area of strength for vendors such as Digital and Hewlett-Packard with their experience in linking to process control and laboratory systems. To a certain extent the same is true for Bull, via its association with Honeywell's control activities, and Siemens, with its experience in automation and programmable logic controllers. These companies are now complementing this traditional expertise with production administration products for the process manufacturing sector.

However, IBM has been particularly active in positioning itself in the process manufacturing sector and has developed a good product supervision and control product called POMS (Process Operations Management Systems).

Many of the larger professional services vendors, with a few exceptions such as SD-Scicon and GFI, have tended to specialise in the discrete manufacturing sector, and are currently not particularly strong in the process manufacturing sector.

Application software product vendors have traditionally had a very minor presence in the process manufacturing sector in industry-specific applications, with the majority of production administration systems being written in-house. However, this situation is now starting to change dramatically.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building, 4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

January 1991
MAPE Vol. II, No. 2

Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

New Opportunities in Western European Process Manufacturing Sector

Driven by the need to be more responsive to its clients and the corresponding necessity of tightening its control of the manufacturing function, the process manufacturing sector in Western Europe is turning to software and services vendors for assistance.

This is creating a number of opportunities for software and services vendors, and particularly, in the short term, for application software product vendors. For example, users are now overwhelmingly accepting production management software products.

The process manufacturing sector is defined as businesses involved in:

- food, drink, and tobacco production
- chemical industry
- extraction of petroleum and natural gas
- mineral oil refining
- timber industry
- manufacture of paper and paper products
- man-made fibres industry
- processing of rubber and plastics
- extraction and briquetting of solid fuels
- extraction and processing of other non-energy-producing minerals

The major opportunity in the short term in the process manufacturing sector is undoubtedly for production management software, as vendors such as ASK and CINCOM are now discovering. There has been very considerable growth in this market, with the result that the majority of the production management package vendors have recently developed, or are currently in the process of developing, products designed specifically for the process manufacturing sector.

Consequently, the next 12 months will be crucial in establishing the industry leaders. It will also be important to be operating on the right technology platform. For IBM, the majority of sales will be for AS/400-based systems, though the RS/6000 may become a significant platform in the medium term. On other equipment platforms, UNIX will become important in the short to medium term.

Unlike in the discrete manufacturing sector, where production management systems were initially installed in isolation with no thought given to their long-term integration with other applications, in the process manufacturing sector there is strong awareness of the desirability of moving to computer-integrated processing and of the need to plan towards this end. Accordingly, there is a greater commitment to open systems and extensive use of consultants for planning the organisation's overall information systems approach.

In the medium term, the integration of production management and process control systems will itself become a major opportunity, though this development is happening already in some of the leading manufacturers. This form of integration provides considerable benefits to users, principally in providing up-to-date information about production status and by providing sophisticated facilities for lot traceability and quality assurance.

As in the discrete manufacturing sector, cost pressures, particularly on the low-value-added businesses, will lead to increased adoption of systems operations in the process manufacturing sector.

The principal application software product opportunities, in addition to production management systems, are:

- Quality systems
- Production supervision and control
- Supervisory control and data acquisition
- Decision support

There is a strong need for in-line quality systems that measure the composition of both raw materials and final products, and feed the results of these analyses in real-time to both the control room or process operator and to the production management system.

To establish the link between production management systems and the manufacturing process, supervisory control and data acquisition (SCADA) systems and production supervision and control products—for example, IBM Process Operations Management (POMS)—will also be in demand. The IBM POMS product is already reported to have had a good reception in Europe, and the first installations are being implemented.

As more and more information becomes available from the shopfloor, there will also be demand for decision support systems to prevent management information overload.

Exhibit 1

Principal Opportunities

- Production administration software
- Professional services/consultancy
- Integration of production management and process control systems
- Systems operations
- Open systems

Exhibit 2 shows vendors' perceptions of the growth prospects for software and services in each of the key subsectors within the Western European process manufacturing sector.

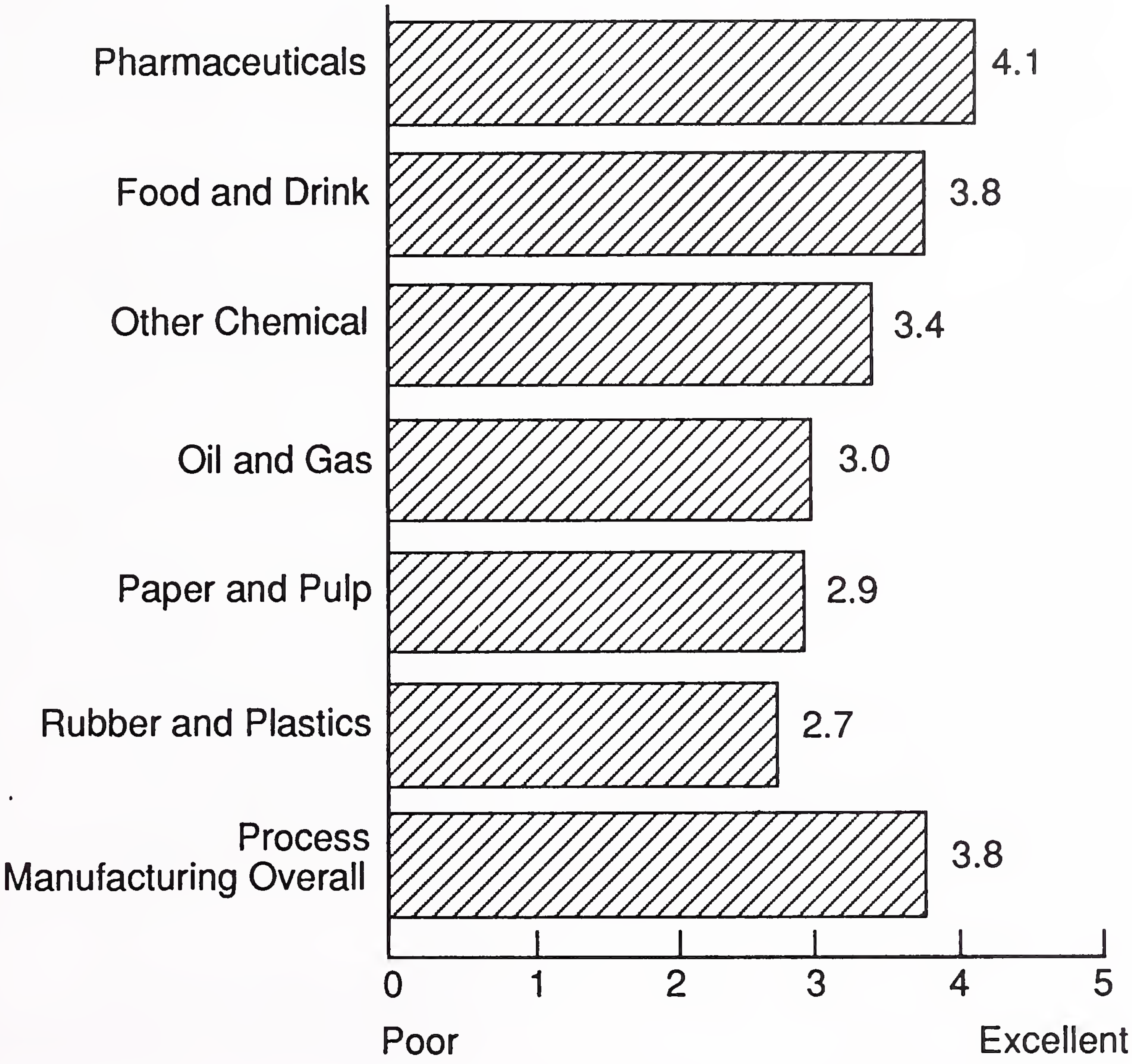
One overwhelming conclusion is that the overall process manufacturing sector is now a very promising sector to target. This view is particularly pronounced among the equipment vendors and application software product vendors. The latter group, in particular, increasingly has been finding the discrete manufacturing sector a difficult market in 1990, and has been turning its attention towards the process manufacturing sector.

Within the process manufacturing sector, the pharmaceuticals and food and beverages subsectors are rated most highly. However, while the pharmaceuticals sector is regarded uniformly well by all categories of vendors, professional services vendors show markedly less enthusiasm for the food and beverages sector than the application software product and equipment vendors. Some professional services vendors feel that while the food industry is tending to use third parties more than in the past, the sector is still very fragmented and difficult to penetrate.

Perhaps surprisingly, given the present high oil prices, the oil and gas subsector has a comparatively low rating. In the upstream activities of exploration and production, this sector is the one most likely to receive a boost from the recent oil price rises.

Exhibit 2

Growth Prospects by Sector



Response to the question, "How do you rate the growth prospects for software and services in each of the following sectors over the next few years?" Sample of 15 software and services vendors.

Standard error = 0.2

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

February 1991
MAPE Vol. II, No. 3
Route to:

INPUT®
Research
Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Integration of Supervisory Control and Production Management Systems Now Imminent in the Process Manufacturing Sector

Software and services vendors with extensive involvement in the Western European process-manufacturing sector were asked to evaluate ten trends possibly taking place in that sector. The extent to which these vendors believe each of the trends is taking place is summarized in Exhibit 1.

The three key trends, as perceived by vendors, are:

- Increased acceptance of standard software packages
- Integration of production management systems with supervisory control and data acquisition (SCADA) systems
- Increasing demand for production management systems

Followed by:

- Increased use of electronic data interchange
- Increased use of external software development staff
- Increased external spending on software and services.

The integration of production management systems with SCADA systems was overwhelmingly perceived to be taking place by vendors, while a move to full computer-integrated manufacturing was perceived to be likely in the medium term.

Users were found to be as enthusiastic about integrating their systems as were the vendors. Some users are already in a position to start integrating production management with SCADA, but the majority felt integration would take place in two to five years, once the administrative systems had been implemented.

Exhibit 1

Summary of Overall Trends

Trend	Rating
Increased acceptance of standard software packages	4.3
Integration of production management systems with SCADA systems	4.1
Increasing demand for production management systems	3.9
Increased use of EDI	
- Links to suppliers	3.6
- Links to customers	3.7
Increased use of external software development staff	3.5
Increased external spending on software and services	3.5
Increasing demand for UNIX-based systems	
- At production management level	3.4
- At SCADA level	3.0
- Among medium-sized companies ($20m - $200m)	3.5
- Among large companies (revenues > $200m)	3.1
Less tailoring of production management packages	3.3
Reduction in staffing of user IS departments	3.1
A move to full computer-integrated manufacturing systems	3.0

1 = Not At All
5 = Very Substantially
Sample of 16 software and services vendors

Responses to the question “To what extent do you believe the trends listed above are taking place in the Western European process-manufacturing sector?”

Exhibit 2

Level of Expectation of Increasing Demand for Production Management Systems by Vendor Category

Vendor Category	Rating
Application Software Product Vendors	4.8
Equipment Vendors	4.0
Professional Services Vendors	3.3

1 = Not At All
5 = Very Substantially

Sample of 16 software and services vendors.

Responses to the question "To what extent do you believe increasing demand for production management systems is taking place in the Western European process-manufacturing sector?"

There is a high expectation of "increasing demand for production management systems" amongst vendors. However, the scores to this question differed markedly by vendor type as shown in Exhibit 2. The exhibit implies that the professional services vendors are not yet taking the same advantage of this trend as are application software product and equipment vendors.

The outlook was felt to be encouraging for professional services, as well as for software products. Vendors see the following trends:

- Increased use of external software development staff
- Increased external spending on software and services

These trends were endorsed by users who anticipated increasingly using external vendors for consultancy and for further integration of their systems over the next few years.

Vendors were more cautious about identifying a "reduction in staffing of user information system departments".

Vendors were perhaps surprisingly optimistic about "increased use of EDI", and regarded links to suppliers and customers as roughly equal in importance. However, these conclusions were not borne out by the user research, which showed a comparatively low interest in electronic data interchange, and that links to customers were more important than links to suppliers.

There is a significant expectation of "increasing demand for UNIX-based systems" in the process-manufacturing sector.

Interestingly, the level of demand is expected to be higher for administrative systems, such as production management, than for shopfloor supervisory control and data acquisition (SCADA) systems, a pattern quite the reverse of that seen in the discrete-manufacturing sector.

Although large companies received a moderate overall score, this moderation was partly due to a more polarised stance by vendors, particularly professional services vendors. In fact, eight vendors scored "increasing demand for UNIX-based systems among large companies" at either 4 or 5, suggesting that there is indeed a significant move in this direction.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

February 1991
MAPE Vol. II, No. 4
Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

European Professional Services—Market Trends

The professional services market is the largest sector of the computer software and services business in Europe. It accounted for over 30% of the total Western European market in 1990, valued by INPUT at $19 billion, and approximately $1.5 billion more than the applications and systems software product sectors combined.

The Western European professional services market is forecast to grow at an average of 20% per year—from $19 billion in 1990 to $46 billion by 1995. The market includes information systems consultancy, custom software development and maintenance, and education and training. It excludes services provided specifically to other software and services market segments such as processing and network services, software products, turnkey systems, and systems integration or operations.

The real growth of the professional services sector has been reduced by recent downturns in IS spending generally. The market is also becoming more competitive. Its relatively high growth rate is still attracting a wide range of vendors that have not previously treated professional services as a main line of business:

- Equipment vendors looking for greater account control and more margin contribution as hardware prices fall
- Management consultancies that see the IT proportion of their businesses grow much more rapidly than any other sector
- Software product companies that are introducing professional services in order to develop more major-account business and ensure customer loyalty in the longer term
- Telecommunications vendors that are developing similar strategies to spread influence in the market
- Staff agencies that have thrived on the continued difficulties of recruiting and retaining good IS staff

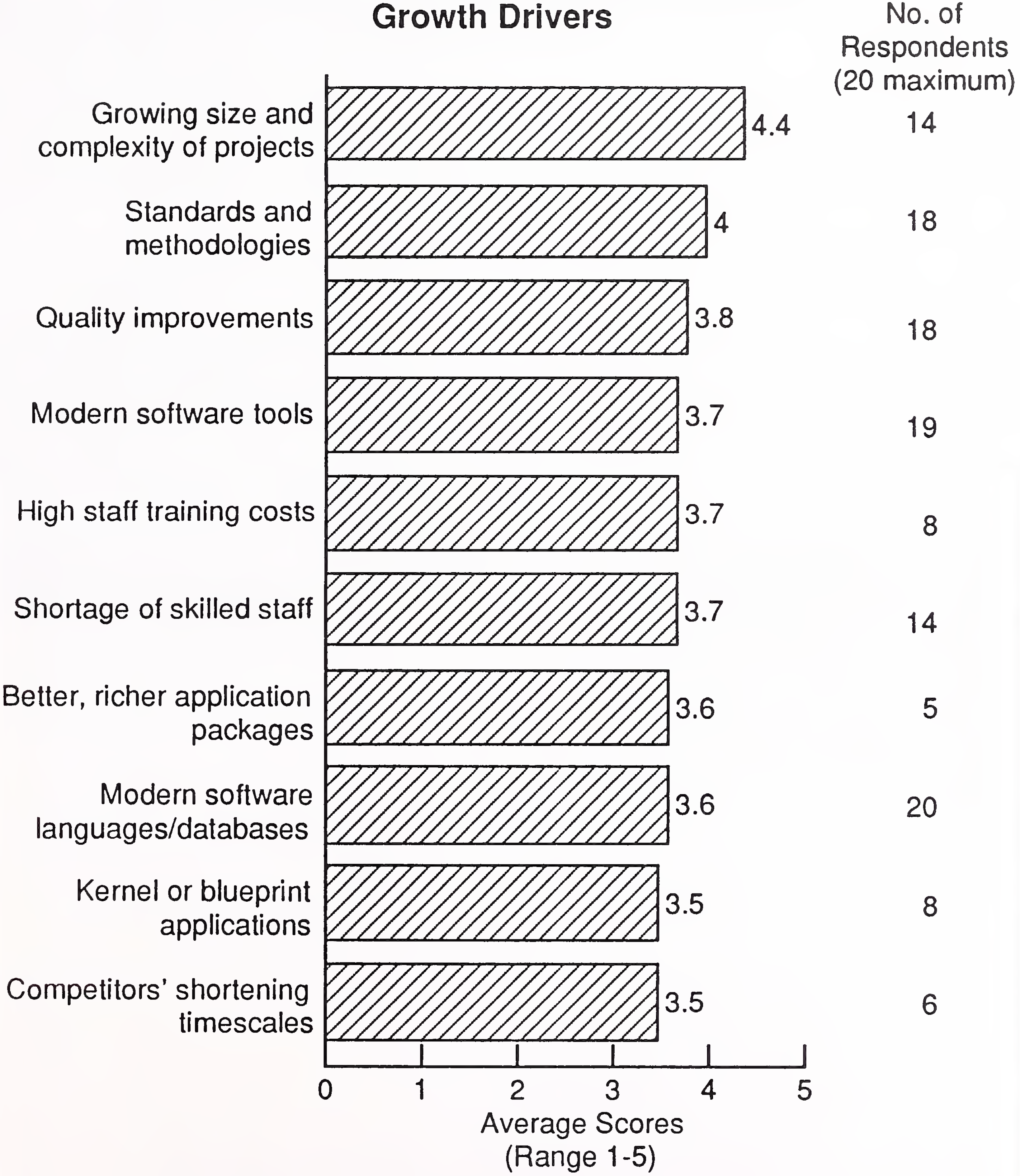
Twenty vendors were questioned about the factors that are stimulating or inhibiting business growth. Exhibit 1 illustrates the positive responses in priority order. The growing size and complexity of IS projects is clearly the primary driving force in the growth of professional services business. Most users have difficulty affording the mix of necessary knowledge and skills required for implementing modern information systems. This difficulty corresponds directly with the vendors' view that complexity is the most significant driver of growth.

Ninety percent of respondents were very positive about the gains they were making by enforcing the use of standards and methodologies among their own staffs. Many had found that clients were also keen to adopt the same procedures. Particular mention was made of the importance of project management procedures and change control procedures.

The messages on quality that have been widely discussed in the last two years are now being reflected in the marketing stance of vendors interviewed. The vendors were not questioned on their ability to measure quality improvements. A “quality” culture is now seen as an essential part of a vendor's competitive armoury. Thirty percent of those interviewed were concerned that they had not made sufficient progress on actual quality improvement, although clients may be unaware.

Exhibit 1

Professional Services Vendor Opinions Growth Drivers



Responses to the question: How important are these factors in increasing professional services growth?
Score 1 = unimportant, 5 = very important. Standard Error: 0.2

The introduction of better, richer application packages was seen as creating more professional services opportunity by only 30% of respondents. However, as shown in Exhibit 2, 45% saw packages as a threat to professional services growth.

Eight out of twenty respondents expect their own use of kernel or blueprint packages to stimulate additional professional services business. All respondents saw these packages as a way of improving staff productivity, rather than a way that clients could develop their own solutions more rapidly.

In Exhibit 2, the most obvious inhibitor of professional services growth appears at the top of the list—reducing client budgets. Seventy-five percent of respondents admitted to experiencing reduced revenues from a significant number of clients.

Nearly half the respondents felt that the high cost of training their staffs was limiting professional-services business growth, implying that they were spending too little. Among the remainder, only one respondent quoted a figure—7% of turnover—for staff training costs. This relatively high figure was quoted as a reason for the company's success in the market.

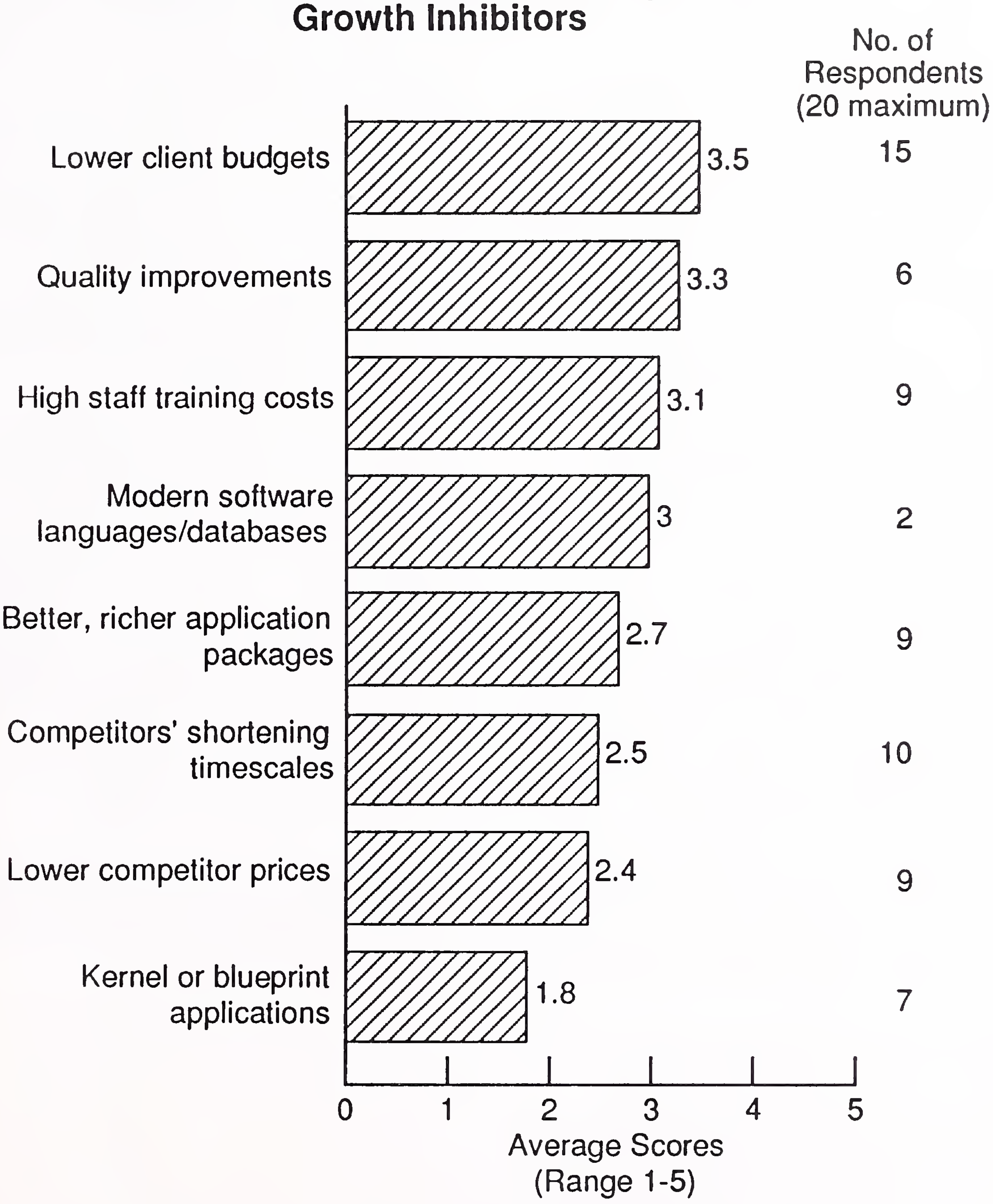
Competition from other vendors was not seen by many respondents as a very significant threat. Only half ranked it at all, and those that did scored it low. This ranking reflects the very complex process in which users select a supplier for a particular professional services task. Demonstrable ability to do the job is generally far more important than beating a competitor on price. (In the public sector, ability and price are of similar importance.)

Strategic Directions

As competition between professional services vendors increases and real growth rates slow, it becomes more important for vendors to have a clear position in the market. The threats to traditional vendors from management consultancies, the major equipment manufacturers and the larger software product vendors require reaction and change. The implications of new platform technologies and methodologies, and the resulting powerful applications software portfolios, must be carefully considered.

Exhibit 2

Professional Services Vendor Opinions Growth Inhibitors



Responses to the question: How important are these factors in reducing professional services growth?
Score 1 = unimportant, 5 = very important. Standard Error: 0.2

Assuming that there is already a strong industry sector orientation to a vendor's professional services business, there are four natural elements of business growth strategy to consider. The four are listed in Exhibit 3.

The first stage of development strategy should address the problem of how to remain competitive—by improving productivity and performance. One must maximise the use of new tools in order to remain competitive in professional services in terms of quality, costs and completion timescales. Clients must be able to see a continuous programme of improvement if they are to stay loyal and not succumb to the sales effort of attractive professional services competitors. This strategy requires imposition of software standards and procedures for development and management of projects, a heavy continuous training programme for staff, and full management attention given to customers and the service they require.

The second element of strategy must be how to win more business from existing client accounts and take a larger share of the budget. Vendors must expand the portfolio of services in order to win more business from existing customers. For example, vendors should consider what software maintenance services could be packaged on a customer-by-customer basis. Vendors should carefully assess the new services clients would value; these services could be the subject of test marketing.

Thirdly, and requiring higher investment and higher risk, any strategy must consider how to better position the company to win more new-name business, but using existing resources and familiar services. In many cases this new business will be best managed within industry sector or geographic groupings, since past experience and deep demonstrable understanding of niche markets is the most significant key to success in winning new-account business.

Finally the strategy should assess the opportunities for building entirely new business. Inevitably such a strategy requires high investment and poses the highest risk. The risk might be lowered by an acquisition strategy or a partnership strategy. There are many successful examples of both strategies in Europe, as well as no small number of failures. Moving up-market and gaining entry through a management consultancy to boardrooms of potential new clients is one of the most attractive options. However, a move in the opposite direction—diversifying the demand chain from consultancy to software development and implementation—is the more successful manoeuvre at present.

Whatever the final strategic mix of business moves, the industry can look forward to a continuing period of consolidations, takeovers and partnerships in the fight for maximum profit and market share. Fuelled by the unchanged trend to outsource many IS activities, the market looks worth winning. But who knows when the groundswell of self-sufficient IS users will begin to counteract the slow demise of the large IS departments and the good fortunes of the professional services vendors.

Further analysis of trends in this market is provided in the INPUT report, *The Western European Market for Professional Services, 1990-1995*.

Exhibit 3

Vendor Growth Strategies

- New Technology, Old Services
- New Services, Old Clients
- Old Services, New Clients
- New Services, New Clients

About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, and systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77
Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

February 1991
MAPE Vol. II, No. 5
Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

European Professional Services Market Forecast

The professional services market continues to grow, as illustrated in Exhibits 1 and 2, from a 1989 user expenditure level of $15.7 billion to a 1990 level of $18.7 billion, representing an annual growth rate of 19%. Over the five-year forecast period, professional services user expenditures will grow at a 20% compound annual growth rate (CAGR), reaching $45.7 billion in 1995.

INPUT previously forecast the same 20% five-year growth rate; however, this year's forecast hides a fall in real growth rates as inflation has risen around 2% across Europe during the year. See INPUT's report, *The Western European Market for Professional Services, 1990-1995* for full details of all forecasts and trends. Appendix E of that report gives detailed assumptions of inflation and exchange rates.

The continued high growth rates for professional services (as compared to many equipment markets that have fallen to single-figure rates) results from on-going demand for information systems that will provide competitive edge and keep operating costs down. It also reflects the growing complexity of systems, which results in many user organisations having to seek outside specialists for knowledge and skills. This is just one of the factors generating the thrust towards outsourcing, or contracting out, more and more IS-related activity. The main perceived benefit is that outsourcing frees clients to concentrate on developing their business skills rather than their computer systems skills.

INPUT divides the professional services market into three subsegments. Exhibit 2 shows the forecast for 1990-1995 for each segment:

- Information systems consultancy is benefiting from the growing awareness, especially among business managers at board level in user organisations, of the critical impact of IS strategy on the success of the business strategy. A growing number of companies are seeking outside advice in this area. The success of Andersen Consulting in Europe indicates that its client "partnership" and "one-stop-shop" approaches—offering a full set of professional services which lead on from Andersen's consulting activity—are highly attractive to clients. Of all the skills required for business success in IS consultancy, undoubtedly good project management is still at the top of the list.

Exhibit 1

Professional Services Market Segments Western Europe, 1990-1995

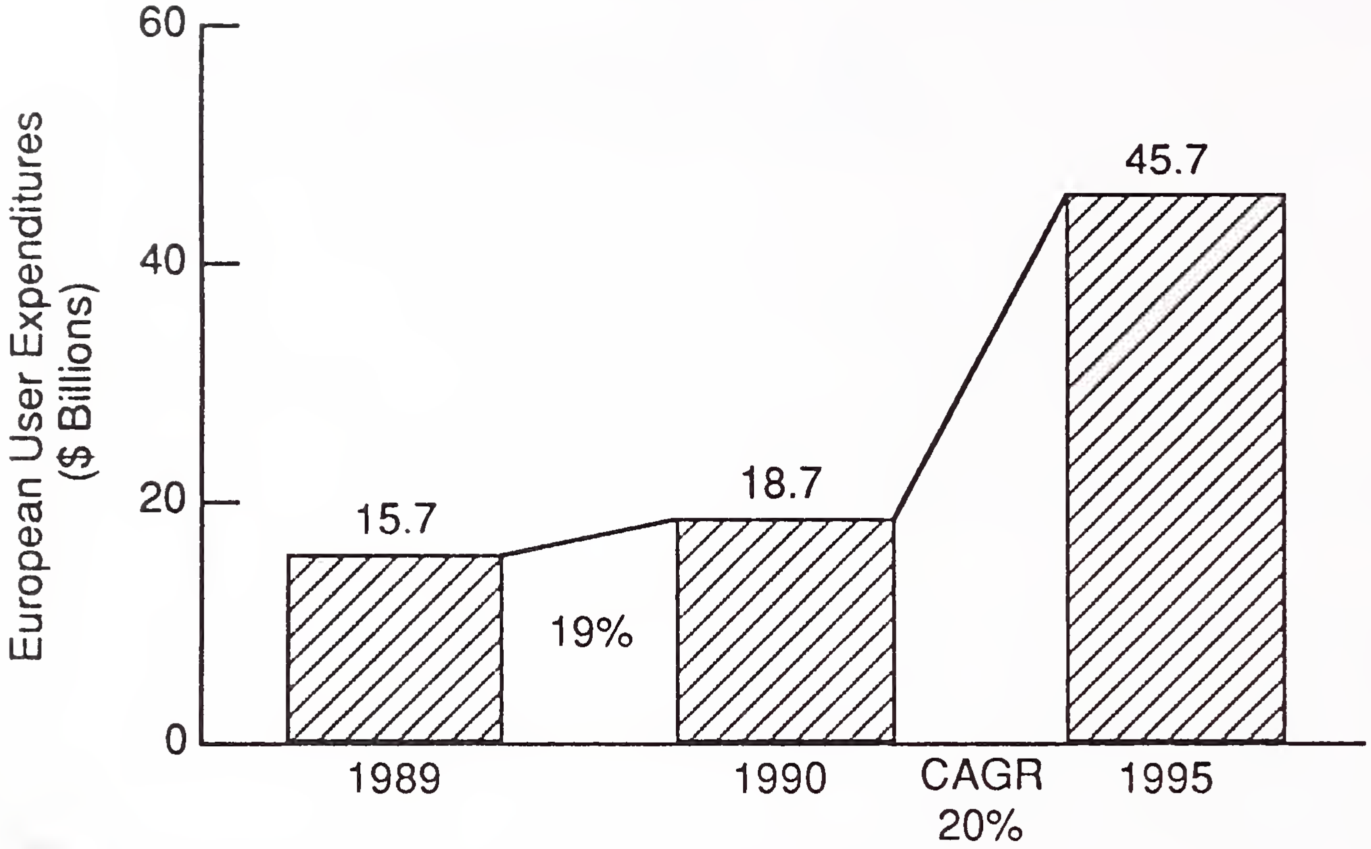
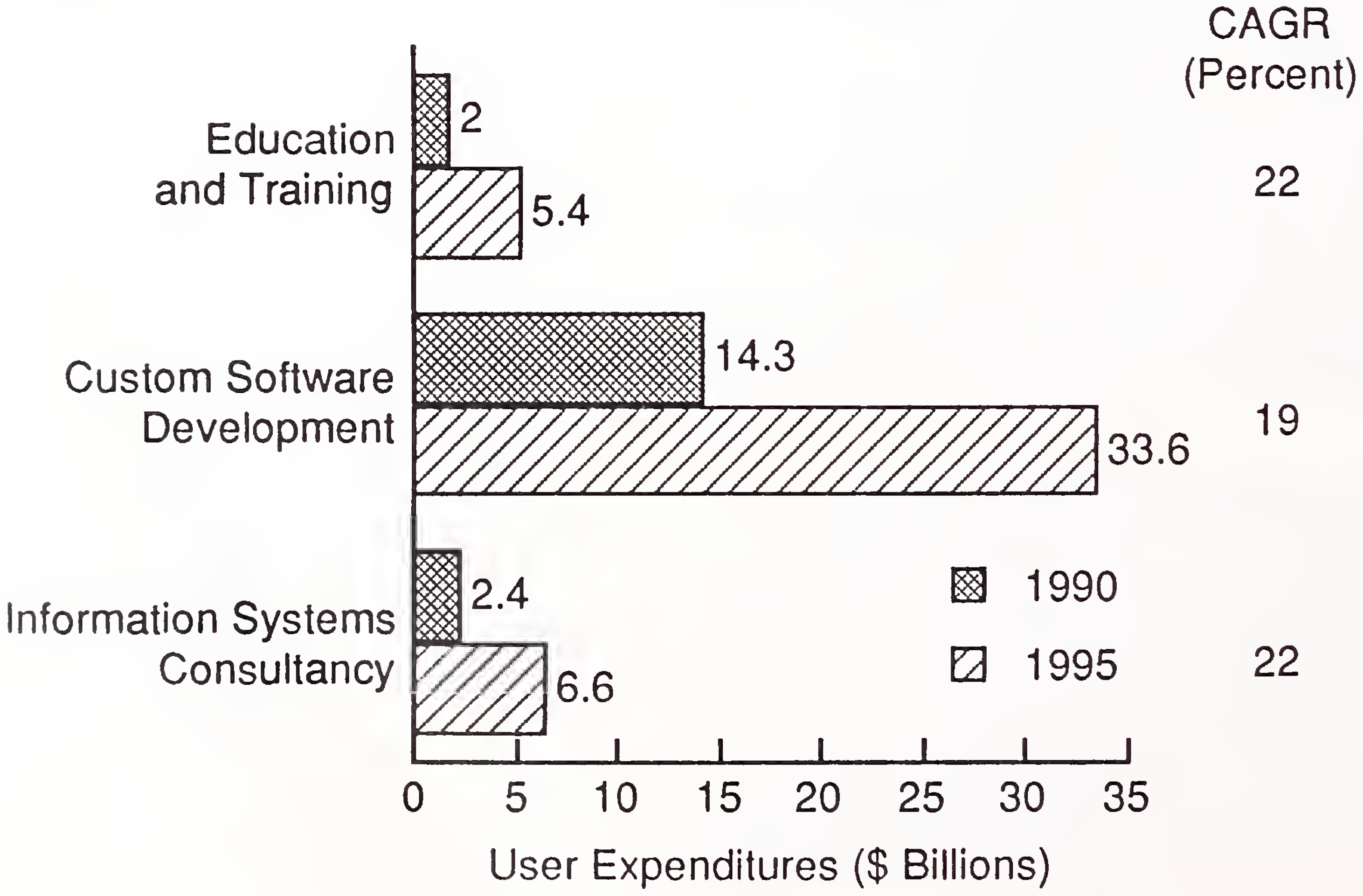


Exhibit 2

Professional Services Market, 1990-1995 Western Europe



- Custom software development and maintenance is the largest subsegment in the software and services market, representing over 23% of the European total. This segment covers all the activities related to custom software projects, from defining requirements to testing and modification—in short, everything except client training. The major segment trends include:

- Adoption of blueprint or kernel application packages to form a consistent basis for custom developments

- Widespread use of modern software platforms such as relational databases, 4GLs and structured design tools

- Improved quality and project control through use of CASE tools, standards and structured methodologies

- Function-rich application packages are replacing wholly custom-built software

The result is a change of emphasis for custom software development, as project content moves away from custom programming towards custom data definition and custom implementation of standard packages.

- Education and training, though perceived as a top priority by users, still receives less budget allocation than users intend, though this position is expected to improve slowly with market growth averaging 22% per year. Product training in the latest technologies and methodologies is the fundamental business. The retraining and career development of users following a successful system implementation is an area still underexploited by education and training vendors.

Forecast Assumptions

The market forecasts provided in this bulletin cover the period 1990-1995 and include assessments for the base year of 1989. The forecasts have been formulated in local currency and converted into U.S. dollars for aggregation and comparative purposes. The U.S. dollar exchange rates used are listed in Appendix E of the full report, *The Western European Market for Professional Services, 1990-1995*.

The forecasts have been expressed in actual monetary terms and therefore include an allowance for inflation.

The principal reasons for a small overall increase between the forecasts made by INPUT in 1989 and 1990 are:

- The general rise of European currencies against the U.S. dollar accounts for some 3.3% of the increase

- A re-evaluation of the market size resulting from the research carried out for this report

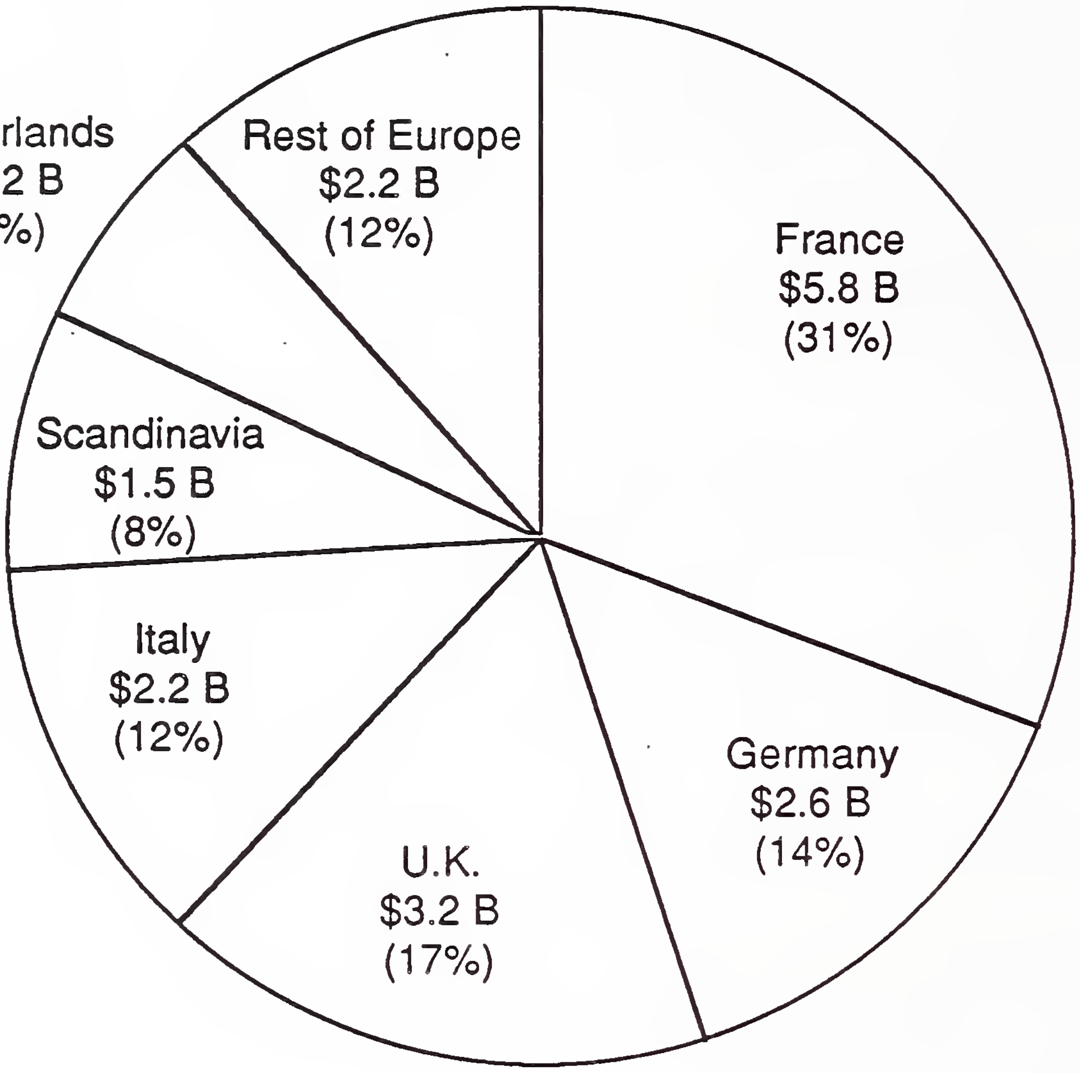
- The current indications of recession in Europe are assumed to be relatively short term rather than applying to the whole five-year period.

- The growth in the popularity of outsourcing (contracting out any or all IT activities) is assumed to continue as a reaction to recessionary pressures among user organisations and the growing complexity of system solutions.

- Leading computer manufacturers are expected to increasingly focus the market's attention on their software and services as they try to compensate for falling hardware margins with new revenue streams.

Exhibit 3

Western European Professional Services Market Distribution by Major Region, 1990



1990 Total Western European Market = $18.7 Billion

The professional services market varies significantly from country to country around Europe. Exhibit 3 shows the split between the major geographic areas.

The market in France is equivalent to that of Germany and the United Kingdom combined. France has had the benefit of nearly two decades of very strong professional services development. Many companies which were originally spin-off DP departments from large commercial or industrial groups have established their total independence over the years. This trend has been more limited in the U.K. and is only now being considered more seriously by large companies in Germany.

Exhibit 4

Leading Vendors, 1989 Professional Services Western Europe

Rank	Vendor	Country of Origin	Estimated Revenues ($ Millions)	Market Share (Percent)
1	IBM	U.S.	785	5.0
2	CAP Gemini Sogeti	France	715	4.6
3	Finsiel	Italy	285	1.8
4	Sema	France	250	1.6
5	Andersen Consulting	U.S.	240	1.5
6	Bull	France	240	1.5
7	Olivetti	Italy	220	1.4
8	Unisys	U.S.	190	1.2
9	Digital	U.S.	160	1.0
10	Volmac	Netherlands	155	1.0
11	CISI	France	145	0.9
12=	ICL	U.K.	140	0.9
12=	Tietotehdas	Finland	140	0.9
12=	SD-Scicon	U.K.	140	0.9
15	ABProgramator	Sweden	130	0.8
16	Gentronix	Netherlands	100	0.6
17	Siemens	Germany	95	0.6
18	Raet	Netherlands	90	0.6
19	Sligos	France	85	0.5
20	Logica	U.K.	80	0.5
21=	Database Informatica	Italy	75	0.5
21=	Sopra	France	75	0.5
23=	Oracle	U.S.	70	0.4
23=	Computer Associates	U.S.	70	0.4
23=	Concept	France	70	0.4
26=	CMG (Computer Mgt.)	U.K.	65	0.4
26=	Dataid	France	65	0.4
26=	Datev	Netherlands	65	0.4
26=	Reuters	U.K.	65	0.4
30	NCR	U.S.	60	0.4
	Others		10,625	67.7
	Total		15,690	100.0

Exhibit 4 shows clearly the commanding position of the French professional services companies in Europe for 1989, with one-third of the top 30 vendors originating in France. CAP Gemini Sogeti is the leading independent vendor by far, and its 1990 acquisition of 65% of Hoskyns has given it its first major share of the U.K. market.

U.S. vendors also have a large share. As in most software and services markets, IBM is the leader, not only through sheer size, but also because it has made strenuous efforts to develop its professional services business and unbundle it from pre-sales support (systems engineering) and maintenance activities (customer engineering). Other major equipment vendors appear to be following IBM's lead. Andersen Consulting, which grew 42% last year in Europe, reached number five in Europe. INPUT has revised Andersen's attributed revenues upward.

Further analysis of trends in this market is provided in the INPUT report, *The Western European Market for Professional Services, 1990-1995*.

INPUT OFFICES

INPUT LIBRARY

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300
Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

Washington, D.C.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870
Fax (703) 847-6872

International

London
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77
Fax (33-1) 42 77 85 82

Frankfurt
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
Saida Building
4-6, Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

May 1991
MAPE Vol. II, No. 6

Route to:

INPUT LIBRARY

INPUT® Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Consulting and Account Management are the Keys to the CIM Market

CIM has the potential to make a major impact on users' business performance, provided that it is implemented to support the organisation's unique business strategy in both the short and long terms. Because of this and the need for strong cross-departmental co-ordination in approaching CIM projects, senior executives are key decision makers in the buying process.

To succeed in the CIM market, vendors need to build good relationships with senior executives and be able to assist them in evaluating business issues. Accordingly, vendor account managers play an extremely important role in developing CIM business. This is especially true for the equipment vendors, who recognise that only their more senior staff have the skills to discuss issues on an equal footing with the user's top management.

Business consultancy is increasingly the catalyst for CIM projects. Some equipment vendors have been endeavouring to use their own experts as business consultants, in support of their account managers.

At present, collaboration partners are of low importance to equipment vendors in terms of lead generation, though some vendors are asked to act as prime contractors by their partners because of their size and perceived financial stability. However, alliances will become increasingly important to equipment vendors over the next few years, as the leading vendors strengthen their links with management consultancies.

The management consultancies are in a strong position to generate CIM business and in recognition of this, a number of vendors—for example, IBM and CGS—have been acquiring or forming joint ventures with these organisations. IBM's joint venture with Coopers & Lybrand in the U.S. to form Meritus Consulting Services is specifically targeted at CIM in both the process and discrete manufacturing sectors.

Professional services vendors typically lack the calibre of account management exhibited by the equipment vendors, and are more dependent on their partners, especially the equipment vendors, for lead generation.

Hence partnerships between vendors are important not only in terms of filling gaps in service offerings, but also in providing access to key decision makers. These are two of the key issues facing vendors in the CIM market.

These and other key issues for vendors are listed in Exhibit 1.

Exhibit 1

Vendor Issues
Computer-Integrated Manufacturing
Western Europe

- Access to key decision makers
- Vendor alliances
- CIM architecture
- Open systems
- Providing building blocks
- Degree of independence

Source: INPUT

When addressing the CIM market, the ability to offer a coherent CIM architecture is a major selling tool. Vendors must be able to demonstrate to the user that any applications implemented or projects carried out are compatible in the long term with full integration of systems. Accordingly, IBM has developed ICA (IBM CIM Architecture), supported by a number of enabling products, while Digital relies on NAS (Network Application Support). Data management across applications is very important.

There is also a strong trend towards use of open systems. At present this is predominantly found at the shopfloor level for applications such as shopfloor data collection and control. However, it is likely that the eventual move to distributed production management systems will see extensive use of open systems.

Applications software products are becoming increasingly essential building blocks for the implementation of CIM, and vendors need access to a comprehensive range of products. Two radically different approaches are open to vendors. One option, typically adopted by IBM, is to select a single application software product for each equipment/application combination and market it strongly. Equity participation is often used to strengthen the ties between partners and maintain the exclusivity of the partnership.

The other approach, adopted by Digital and CGS, is to form a number of loose partnerships with competing applications software product vendors. This makes it easier for the prime contractor to maintain the appearance of independence and to select the most appropriate combination of applications for each situation.

In addition to applications software products, many equipment vendors need access to third-party implementation and software development skills. IBM's authorised industrial systems integrator programme is a means of developing closer relationships with suitable partners for this purpose.

The fastest growing subsectors in the adoption of CIM by the discrete manufacturing sector are the aerospace, automotive, and electronic engineering subsectors; the most common types of projects encountered by vendors are listed in Exhibit 2.

The most common type of project is linking the shopfloor to the production management system. The main reason for doing so is the collection of up-to-date information to assist in managing throughput and to support total quality management and just-in-time techniques. At present, there is less emphasis on direct control of shopfloor equipment. Supply chain integration is becoming very

Exhibit 2

Principal Project Types
Computer-Integrated Manufacturing
Western Europe

Project Type	Frequency of Occurrence
Linking production management and shopfloor systems	High
Engineering data management	Medium
Linking CAD/CAE to production management	Medium
Shopfloor equipment control	Low-medium

Source: INPUT

important, with a resulting emphasis on product tracking and improved communication with clients and suppliers.

The integration of CAD with production management systems via computer-aided planning or engineering data management shows a lower level of activity than shopfloor integration. However, CAD integration is now occurring in the aerospace sector, with the electronics and automotive sectors likely followers.

Computer-integrated manufacturing has traditionally only been a feasible goal for the larger manufacturer. However, requirements such as just-in-time deliveries and quality procedures imposed by some of these companies on their small suppliers are also encouraging smaller organisations to move towards a more integrated environment.

While application enablers may be the most appropriate route for large manufacturers to take towards integration, applications software products are more appropriate for the smaller organisation.

Overall, equipment vendors are well positioned to target the CIM market with strong account management and credible CIM architectures. However, they lack internal business consulting and software development skills and are developing partnerships to gain access to these skills.

The professional services vendors are typically—though with some exceptions—less well positioned to target the CIM market, since they lack formal CIM architectures and have less-capable account management. They also tend to have less-developed business consulting skills. However, they are extremely well positioned to support equipment vendors, providing many of the implementation services that the latter lack the resources to carry out.

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Subscription services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services. INPUT specializes in the software and services industry which includes software products, systems operations, processing services, network services, systems integration, professional services, turnkey systems, and customer services. Particular areas of expertise include CASE analysis, information systems planning, and outsourcing.

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

June 1991
MAPE Vol. II, No. 7

INPUT®
Research
Bulletin

Route to:

A Publication from INPUT's Market Analysis Programme—Europe

UNIX Software and Services European Market Issues

User demands are the primary driving force in the European UNIX market place. These are summarised in Exhibit 1 along with the resulting response from vendors.

The user search for ever greater value for money is forcing vendors into more open competition, hence the widespread introduction of UNIX-based product lines.

Existing investments in working practices, data, skilled users, IS staff, software, etc. are considered the largest barrier to change in the user community. The result is great advances in the portability of such investments where open system standards have been employed.

The demand for productivity gains has resulted in new levels of innovation in products and services. The establishment of standards seems to spawn new breeds of products that help to differentiate one vendor from another.

As the pace of business increases, users are demanding more flexibility. Vendors are responding by providing federated solutions that combine the control of a central hub with the pragmatism of distributed systems (minicomputers, servers, workstations and PCs). These equipment platforms can now share common systems software environments and applications.

Exhibit 1

User Demands in the UNIX Market

Primary User Demands	Vendor Community Responses
• Better value for money • Investment protection • Productivity gains • Flexibility to change • Packaged solutions	• More open competition • More portability of software and data • Advanced tools and larger skills pool • Federated solutions • Reasonable choice of vendors and products

Source: INPUT

INPUT LIBRARY

The wide choice of function-rich, flexible packaged solutions based on UNIX and other standards allows users to buy effective alternatives to in-house or custom developments. Many users are now selecting their software package(s) first and then going out to tender for the platforms on which it will run; platforms range in scale from PCs to large multiprocessor servers.

During the vendor research for this report it became clear that UNIX is in no sense a single coherent market. Very few issues were mentioned by more than one interviewee. Those that were are listed in Exhibit 2. They all represent barriers to faster migration to UNIX.

Small but successful vendors are concerned that their rapid growth has become limited by lack of available funding. Vendors that wish to retain their independence, rather than be absorbed by a larger company, are finding it difficult to raise additional finances in the current economic climate. In this state they are likely take-over targets.

The continuing wars between UI and OSF reported in the press have been and still are a barrier to faster take-up of UNIX in the commercial sector of the market. Some would say this has worked in the interests of OSF members. But there are now signs that open systems (rather than UNIX per se) are getting a fair hearing in the IS strategies of many large corporations. Many large companies are now running pilots to evaluate the promises of open systems.

Exhibit 2

Vendor Issues

- Funding business growth
- Press wars between UI and OSF
- Defence of proprietary customers
- UNIX as peace of mind

Source: INPUT

Traditional equipment vendors have naturally been very protective towards their proprietary system customers. Upgrade and maintenance revenues are conventionally far more profitable than new system sales, so rapid switches to UNIX can damage profit margins. User pressure is running high in 1991, and Digital is now talking openly about embracing open systems for all its customers. Even IBM has made statements about converging SAA with the open systems world.

Software vendors whose products bridge the proprietary and open equipment platforms are finding that this promise of an easy transition to UNIX has slowed the pace of UNIX take-up. Customers prefer to retain their existing equipment vendor and to switch to UNIX at some time in the future, rather than jumping right now.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

June 1991
MAPE Vol. II, No. 8

INPUT®
Research
Bulletin

Route to:

INPUT LIBRARY

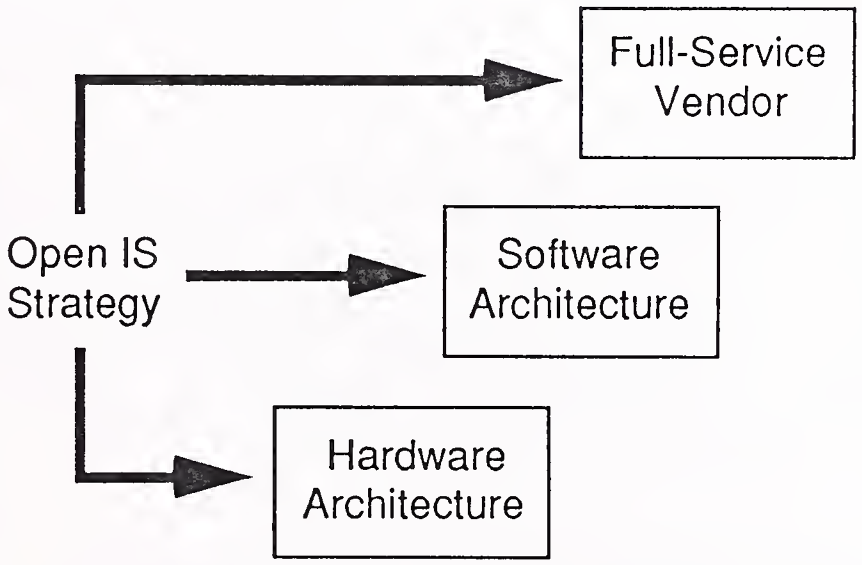
A Publication from INPUT's Market Analysis Programme—Europe

Impact of UNIX on Software and Service Vendors

INPUT LIBRARY

Exhibit 1

Impact of UNIX on Vendor Selection



Source: INPUT

UNIX and the open systems movement are encouraging the trend for user organisations to outsource more of their IS activities.

The rapid rise of UNIX has had a major impact on equipment and software product vendors, but is less critical to the software service vendors who focus on customer issues more than products. The impact on each type of vendor is expanded upon in the following paragraphs.

Establishing a wide choice of portable and scalable applications was one of the earliest goals of UNIX devotees. The perception was that in the future the choice facing systems users would narrow to IBM, Digital or UNIX. Now IBM and Digital are active in the UNIX market. With Digital seeking to move its whole corporate image across to open systems, including the VAX/VMS operating system, it may be that in the future the choice will seem narrower still.

Exhibit 1 shows how user purchasing policies are changing emphasis. In the past, a short list of preferred hardware vendors was a key element of IS strategy. Now hardware is a lower priority. There are many examples of users giving top priority to choosing software products, followed by the choice of prime contractor for system implementation and ongoing support.

UNIX and open systems standards, following the example of the DOS world, have encouraged the development of many different supply channels. In some cases there are several channels for the user to deal with for a single product. For example, different vendors may be responsible for each of the following activities: marketing, selling, delivering, maintaining, and supporting.

Exhibit 2

Impact of UNIX on Software Product Vendors

- Traditional Vendors (D&B, CA, SAP ..)
  - Slow, but re-engineering
- Software Platforms (Oracle, Progress ..)
  - Emulating 70s manufacturers
- Newer Vendors
  - Bet on software platforms
- PC software
  - Following customers to UNIX

Source: INPUT

Impact on Software Product Vendors

Exhibit 2 summarises the impact on software product vendors. Rather like their large equipment vendor counterparts, the large traditional software vendors are reacting slowly to UNIX. There are signs that they are preparing to jump into the UNIX market but are waiting to see the customer demand first. Several admit to re-engineering their most popular product lines for open systems—to be ready for a 1991 or 1992 launch—primarily in response to customer demand for downsizing rather than for UNIX.

The software platform vendors are winning the customer loyalty that users used to have towards hardware vendors in the 1970s. Having apparently escaped from being locked in to a hardware supplier, users are now realising that they are choosing to be locked in to a software supplier instead.

Some vendors offering the same platform across proprietary and UNIX operating systems have found that customers choose a two-step migration strategy. Once they are happy that UNIX is a future option, they stay with their proprietary systems but adopt the new software platform for all new developments. In the eyes of the customer this reduces the risk of change through a piecemeal approach. A similar approach can be seen in Digital's open systems stance—NAS.

Producers of *new* software products, both systems software and applications, are choosing to develop on one or more of the software platforms (common application environments). Software platforms offer:

- A community of interest with other vendors who often have different specialisations

- A shield from all the vagaries of new releases of operating and networking software and standards. These are handled by the platform vendor.

In contrast, many longer established vendors have chosen the C language as their route to portability. However, they are unable to gain maximum benefit from the latest advances in 4GLs and other development tools, and have to keep their applications and tools in step with new operating systems or language standards.

PC software vendors are getting into UNIX because their customers are now doing so in sufficient numbers, especially corporations that have extensive PC networks.

Impact on Software Service Vendors

As far as UNIX is concerned, service vendors are the least affected of the vendor groups analysed. Exhibits 3 and 4 list INPUT's standard categories of delivery modes in order of greatest UNIX impact.

Exhibit 3

Impact of UNIX on Service Vendors - 1

- Systems Integrators
  - Distributed systems drive market
  - 2nd-tier stake future on SI & UNIX
- Turnkey Systems
  - Win on business merit
  - Customer's hardware choice
- Professional Services
  - Improving productivity
  - Responding to transition demand

Source: INPUT

Most affected is systems integration, one of the most rapidly growing market sectors in Europe. The demand for UNIX parallels the demand for systems integration, both the result of demand for more distributed application systems. UNIX offers flexible, low-cost platforms. Systems integration promises to knit together large multivendor system solutions, fully exploiting existing IS investments.

For a large equipment vendor, having UNIX removes a possible objection or barrier to winning bids for SI contracts.

The most widespread use of multi-user mini- and microcomputer UNIX systems is for turnkey systems. Here the vendor is able to win entirely on his own product and people merits rather than on the basis of the hardware vendor he happens to propose. If the customer has a preference for a certain hardware vendor, then the turnkey vendor has a good chance of being able to satisfy the requirement. This has significantly broadened the market opportunity for UNIX-based turnkey system vendors, since suitable platforms are usually available from IBM, Digital and all others.

Professional services vendors range from those who offer specialist UNIX services like technical education and training or consultancy, to those who have naturally started to consider UNIX-based solutions across the whole spread of professional services they offer: feasibility studies, architecture recommendations, custom software developments, etc.

Exhibit 4

Impact of UNIX on Service Vendors - 2

- Processing Services
  - Reviewing potential margin gains
- Network Services
  - Little pressure to migrate to UNIX
- Systems Operations
  - Transition phase opportunities

Source: INPUT

Many vendors are already exploiting CASE environments and 4GLs running on UNIX workstations in order to improve the productivity of their own staff, though it takes some very determined investment decisions to ensure that such staff development gets priority.

Customers requiring help in the transition to UNIX and open systems are creating special demands on those vendors who have already built up UNIX-based skills. This is likely to be a long-term demand, as the migration to UNIX-based systems will last out the decade. But the skills most in demand will relate to C programming techniques, the new software platform environments, and to application areas rather than to the technical intricacies of the UNIX operating system itself.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
52, boulevard de Sébastopol
75003 Paris, France
Tel. (33-1) 42 77 42 77 Fax (33-1) 42 77 85 82

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

July 1991
MAPE Vol. II, No. 9

Route to:

INPUT Research Bulletin

INPUT LIBRARY

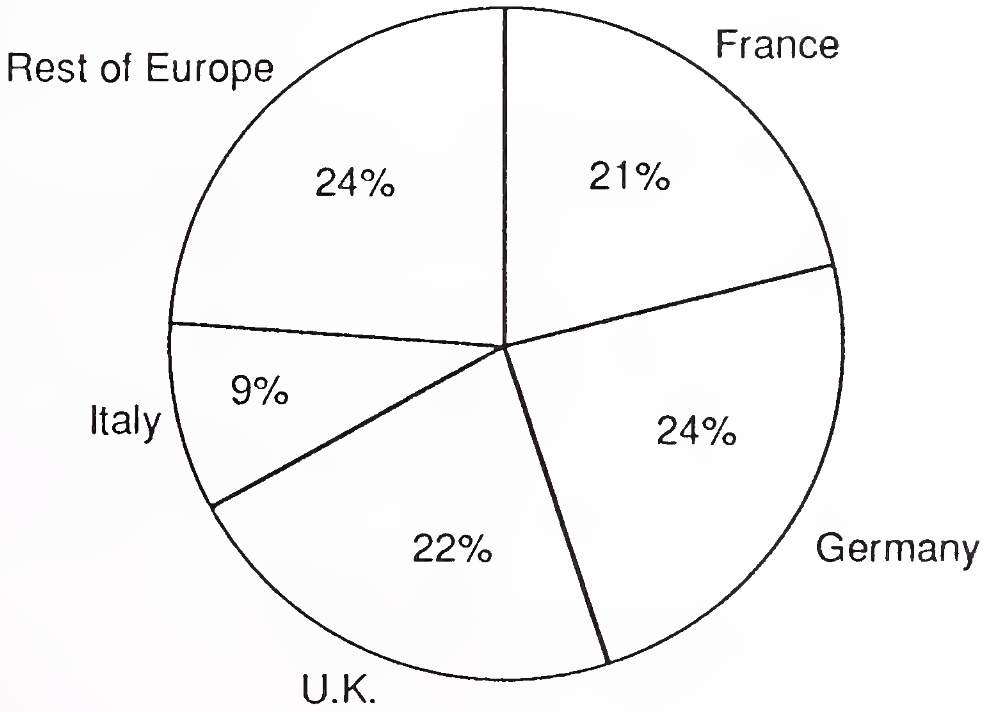
A Publication from INPUT's Market Analysis Programme—Europe

UNIX System Software Products European Market Forecast

Germany is the largest market for UNIX-based system software products in Europe, having had the benefit of a strong government mandate for open systems plus heavy commitment from both Siemens and Nixdorf (now SNI) to UNIX standards. Exhibit 1 shows the balance of the market by major country. This is slightly different from the overall European software and services market, where France has a lead over Germany. Expected growth rates are very similar across all the European countries, though the highest forecast is Spain at 35% CAGR, with all equipment vendors switching sales and support resources to open systems product lines.

Exhibit 1

Major Country Markets UNIX Systems Software



1991 Western Europe Total Market = $700 million

Source: INPUT

UNIX has become established across all categories of hardware platform, from mainframes and supercomputers down to PCs, as Exhibit 2 establishes. But nowhere is it more accepted than in the workstation sector.

Workstations have been highly successful among professionals in the engineering disciplines—design, analysis, manufacturing, software development, energy, etc. Now, as hardware costs fall they are appealing to more commercial users such as financial dealers requiring high density and mobility of information on screen. High-performance networked PCs and RISC-based workstations are now competing with similar prices and a UNIX-based operating system.

Exhibit 2

Key Market Sectors

Platform	UNIX Strength	Direction
Workstations	Engineering disciplines	Commercial and financial
PCs	Departmental Professional	Power servers Workstations
Minicomputer	Government Small business	Large business Large departments
Mainframe	Telecomm. and engineering	Software development

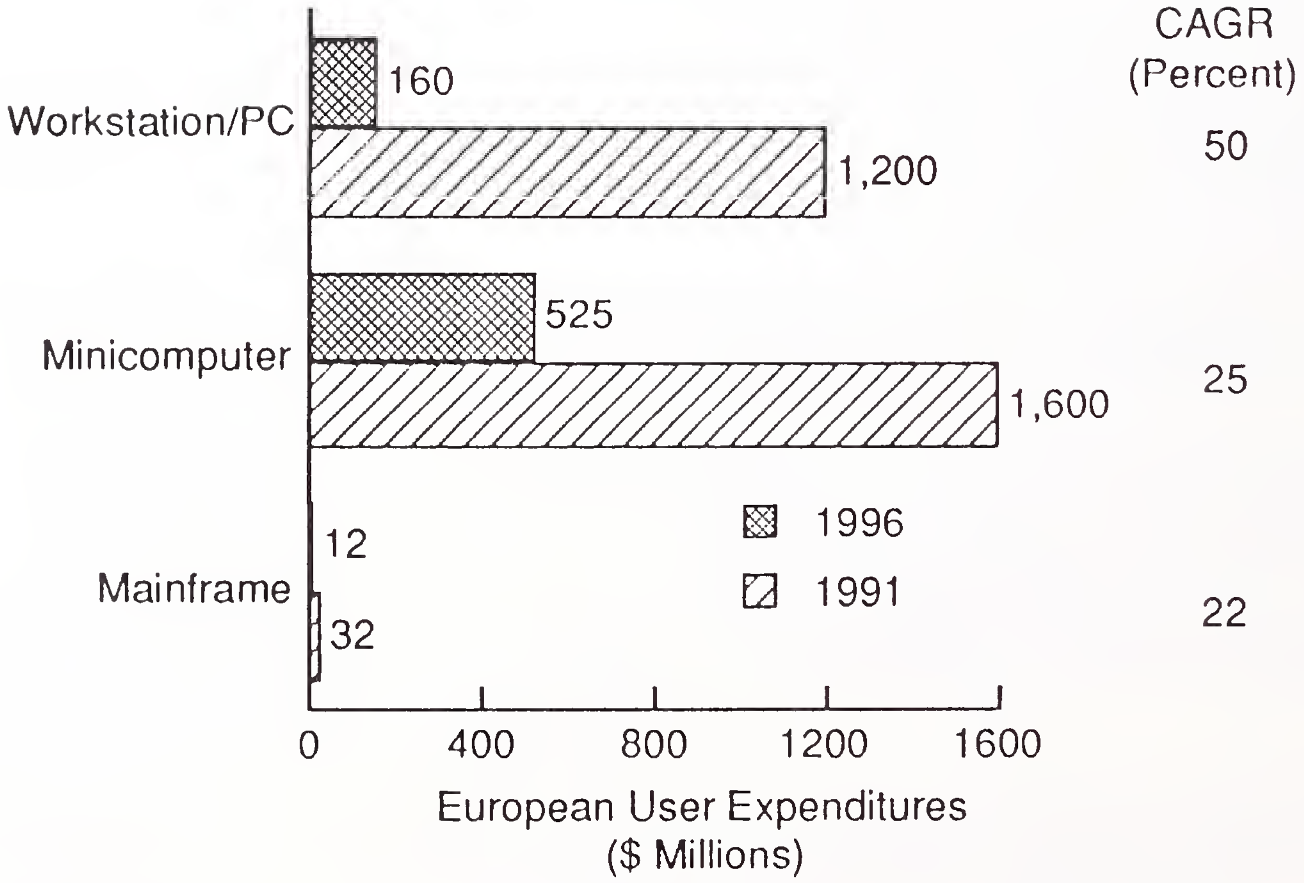
Source: INPUT

Exhibit 3 forecasts a market growth of 50% per annum for UNIX system software on workstations and PCs over the next five years.

The government sector has been, and continues to be, a strong stimulus to growth in Europe. Encouraged by the European Commission, country

Exhibit 3

Equipment Platform Markets
UNIX Systems Software, Europe



Source: INPUT

governments are imposing mandatory requirements for UNIX and other open system standards to be met for all new computer system purchases. In general, only compatibility with installed software or national security considerations can be used by central government departments to avoid requirements such as compliance with Posix and OSI standards. Local government bodies are not quite so constrained, but UNIX is growing in popularity as the means to get best value for money over the lifetime of a system.

Japanese activity in the UNIX market is still relatively invisible. Only one of the vendors interviewed mentioned the Japanese as a potential threat in Europe.

There are signs that many large multinationals in the commercial sector are starting to invest heavily in significant UNIX-based projects. IBM and Digital have both responded strongly to this trend with positive open systems pronouncements.

Throughout the 1980's UNIX was emerging as an acceptable standard. During that period large numbers of small business systems based on UNIX were delivered, providing the original market opportunity on which most of the small UNIX specialist vendors built their businesses. Many of these vendors continue to grow but within a larger parent organisation interested in bigger customers.

The minicomputer sector is the largest for UNIX systems software and will remain so for some time. Proprietary minicomputer shipments are however declining in the face of UNIX competition, coming not only from the mini makers, but also as a spin-off from the workstation market in the form of powerful multi-user network servers.

UNIX systems software market value is less than one would expect judging by the penetration of UNIX hardware. This is because UNIX pricing is keener due to the more open competitive environment, a factor which is expected to continue to push prices down compared to proprietary softwares.

Mainframes account for over 50% of the current systems software market in Europe and hardly any UNIX business. However, UNIX is pushed strongly by Amdahl, and Fujitsu has also launched products. The arrival of acceptable transaction processing software may boost this market faster than predicted.

UNIX systems and software products are likely to stay largely confined to the workstation and minicomputer sectors, where penetration should increase from 11% in 1990 to 16% by 1996, in response to the continuing demands for open systems, downsizing and portability.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's
Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to
purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Subscription services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services. INPUT specialises in the software and services industry which includes software products, systems operations, processing services, network services, systems integration, professional services, turnkey systems, and customer services. Particular areas of expertise include CASE analysis, information systems planning, and outsourcing.

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
24, avenue de Recteur Poincaré
75016 Paris, France
Tel. (33-1) 46 47 65 65 Fax (33-1) 46 47 69 50

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

July 1991
MAPE Vol. II, No. 10

Route to:

INPUT® Research Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

Software Support and Maintenance Western European Market

Exhibit 1

Categories of Software by Source

• Class A	In-house-developed
• Class B	Custom/contracted
• Class C	Applications products
• Class D	Systems products

Source: INPUT

For the purposes of market analysis, it is convenient to classify software into four categories, as specified in Exhibit 1.

Classes B, C and D are all provided by software vendors of one type or another:

- Class A is applications software developed and supported in-house by IS staff. There is relatively little vendor service demand for this class of software.
- Class B covers all software that is developed to the customer's specification by a professional software service vendor. This could range, for example, from a simple cheque-printing application to a large sales and marketing information system.
- Class C covers all applications software products sold and supported as packages. Examples are payroll, financial accounting, production control, office automation, real estate management, etc.
- Class D consists of systems software products such as operating systems, utilities, languages, CASE tools and relational databases.

Exhibit 2 summarises the differing views of software maintenance held by product vendors, service vendors and users (IS management).

To a product vendor, the term "maintenance" has a very narrow definition. It is the process of improving the quality of a software product by documenting errors and developing new versions that correct potentially damaging problems.

Many product vendors manage the maintenance and enhancement of their products as separate activities, which

Exhibit 2

Differing Definitions of Software Maintenance

- Product Vendor - “Software Maintenance”
  - Fixing faults in software product
  - Carefully separates maintenance from support functions
- Services Vendor - “Software Maintenance”
  - Keeping each client happy
  - Often uses same resource for support, maintenance and enhancement
- IS Management - “Software Maintenance”
  - Everything done after software goes live

Source: INPUT

results in separate software releases, or issues, for bug-fix and new features. Product vendors reduce their maintenance activities to minimal levels.

Software service vendors follow the same principles of minimising maintenance activity, but they work much more closely with the customer/user, and therefore have a clearer view of customer satisfaction than some product vendors. They usually use the same team to develop, enhance, support and maintain their own software. Contracts normally offer support and maintenance services combined.

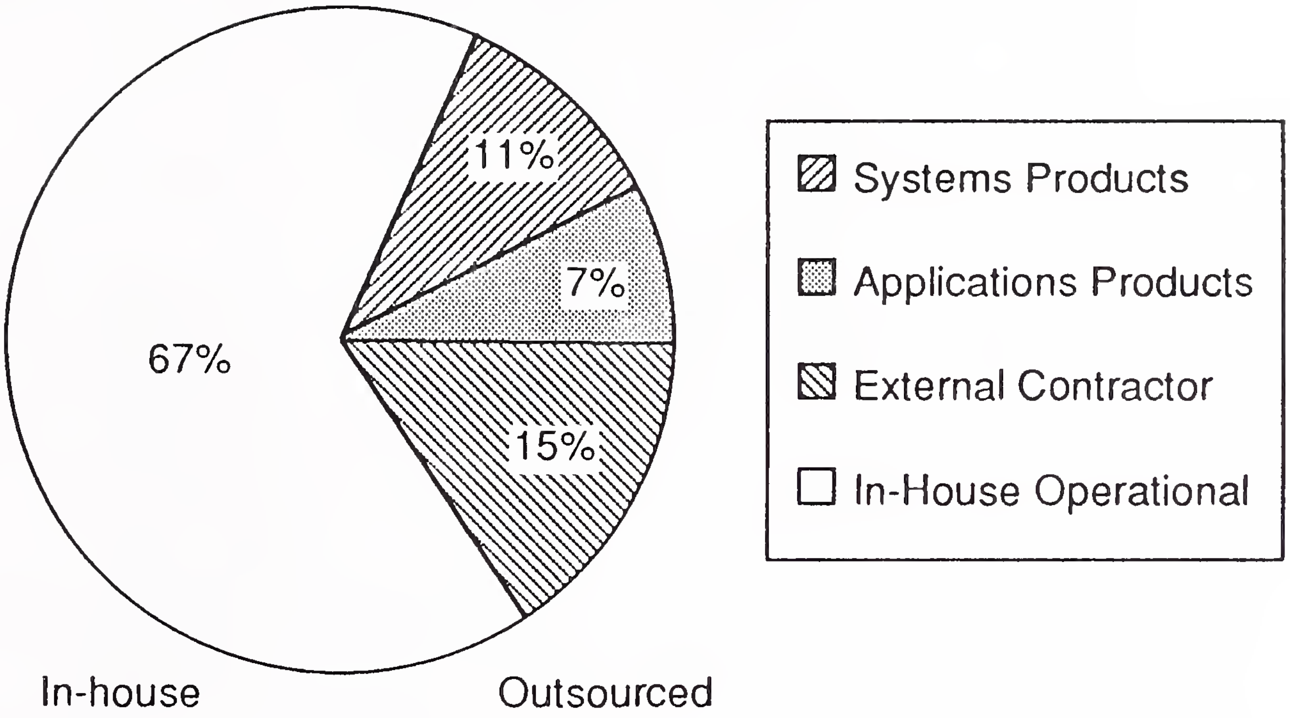
IS managers have a wholly different view of software maintenance. For most, the only clear definition is that it covers everything done after the software is installed and is in active use—operational software support. In this sense it is often not clear that enhancement, bug-fixing, re-engineering, end-user or operator support, and modifications are separately identified and managed actions.

Users in Europe spent about $90 billion on the provision and support of software during 1990. As Exhibit 3 shows, they spent about 15% of that on external professional service contractors and a further 18% on purchased or licensed software products.

Exhibit 4 shows the contrasting picture if one looks at the operational software support and maintenance activity only. The in-house IS staff consumes 88% of the budget. Less than 1% goes to vendors servicing the customer’s own in-house-developed software, an amount so negligible it isn’t shown on the chart. The vendor revenues shown in the chart are those related to the software support supplied in the first place by those vendors.

Exhibit 3

User Expenditure Budgets
Software Provision and Support

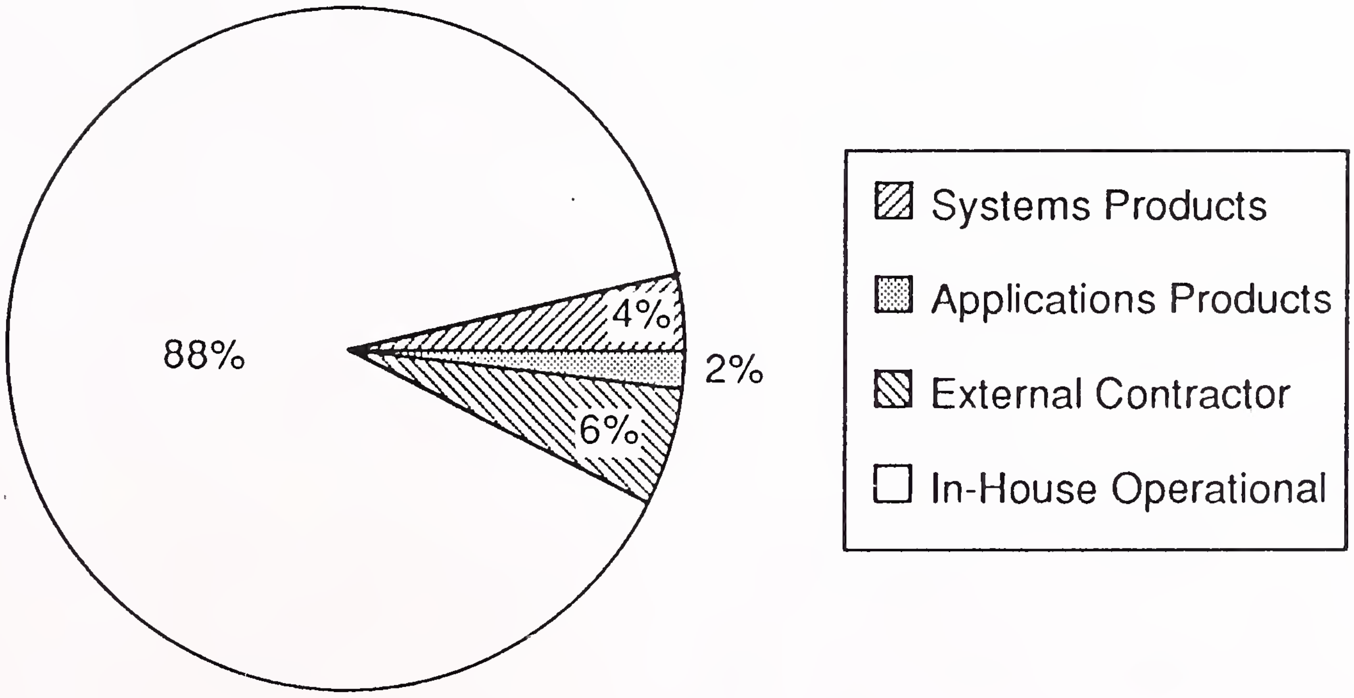


Western European Users
Total Estimated Software Budget, 1990: $90 Billion

Source: INPUT

Exhibit 4

User Expenditure Budgets
Software Maintenance and Support

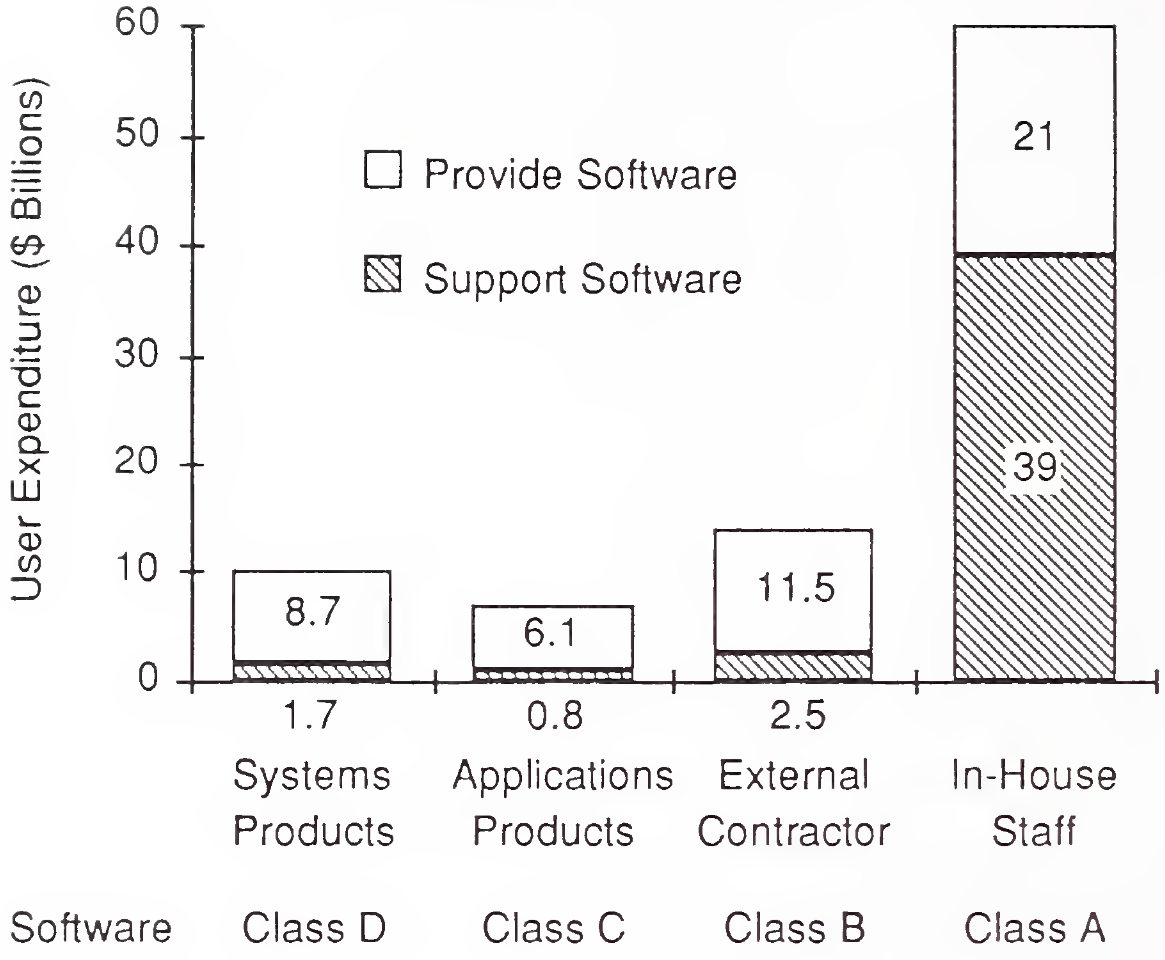


Western European Users
Total Estimated "Maintenance" Budget, 1990: $44 Billion

Source: INPUT

Exhibit 5

Software Provision and Support—
Western Europe, 1990



Source: INPUT

The relationship between the cost of providing software and the expenditure on its support is shown in Exhibit 5. Here one can clearly see the overwhelming size of the in-house "software maintenance" task in supporting operational in-house software.

Overall $47 billion is spent buying or developing software, compared to $44 billion spent supporting it once it is in use.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's
Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to
purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

August 1991
MAPE Vol. II, No. 11

Route to:

INPUT Research Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

Daimler-Benz Sogeti Alliance Raises Stakes for Global Leadership in Information Services

Cap Gemini Sogeti (CGS), Europe's largest professional services vendor, has substantially increased its lead in Europe by joining forces with Daimler-Benz. In the last five years CGS has grown to over twice the size of its nearest competitors in Europe. Very few can now challenge CGS in the European leadership race. But CGS still has a long way to go to achieve a similar position in the U.S. and Japan.

On July 23rd Daimler-Benz and Sogeti announced that the German group will take a FF 2.4 billion 34% stake in Sogeti, with an option to take a controlling interest in 1995. Founded by its chairman Serge Kampf, Sogeti is the holding company for the Cap Gemini Sogeti (CGS) professional services group and the recently formed Gemini Consulting group.

First step will be a German joint venture with a 51% holding for Debis Systemhaus, the computer services arm of Daimler-Benz formed in 1990, and 49% for the German subsidiary of CGS.

Clear European Leader

The combined forces of Cap Gemini Sogeti and Debis Systemhaus will produce a European workforce of 20,000. The German workforce increases from 1,000 to around 5,000—one quarter of the new group's European workforce—compared to staff levels of 6,900 in France and 3,500 in the U.K.

In terms of 1990 revenues, Debis adds $420 million (DM 750 million) to Cap Gemini Sogeti's $1,680 million (FF 9,200 million)—though 80% of revenues were captive to Daimler-Benz. If full revenues of Hoskyns, a major U.K. acquisition by CGS in 1990, had been consolidated, the new group would have had a total revenue of over $2.2 billion at the end of 1990.

However, only $0.2 billion of that $2.2 billion came from outside Europe—from the U.S. operations of CGS, which saw revenues fall 12% to $218 million in 1990 from $250 million in 1989. The question

INPUT LIBRARY

that remains is how the combined forces of Sogeti and Daimler Benz can leverage their European power base to reach their declared goal of being a world player in the software services market.

Further partners will undoubtedly be brought into the group, along the lines of the Daimler-Benz agreement, to provide a global vehicle for delivery of professional information services. With some 50% of the world software and services market in the U.S.A. and a further 12% in Japan, the enlarged Sogeti group must now build on its European stronghold with one or more of the established leaders in these countries.

Some of Sogeti's competitors suggest that the unique management culture that has created CGS may not stretch to a global operation. However, the tried-and-tested formula—adding leading national companies to the group but encouraging them to retain their cultural freedom with a sound financial framework—shows little sign of running out of steam.

The financial strength and diverse market penetration of the combined group can only bode well for the many clients looking for long-term stable relations with their primary service suppliers.

Although CGS has always declared an aversion to being in the product business—software or hardware—it does have all the alliances in place to enable it to deliver the very best and most suitable products as components of its solutions. It can be expected to continue to maintain its independence from product vendors.

Debis will also strengthen the CGS position in systems operations by extending its market leadership in the U.K. into Germany and bringing further economies of scale and greater credibility to the new facilities management venture formed in France between Hoskyns and Cap Sesa.

In the manufacturing sector Debis brings an exceptional German centre of excellence to CGS. What better place for a professional services vendor to build a market-leading position in manufacturing?

Profile of Debis Systemhaus

Debis Systemhaus was formed in 1990 as a spinout of the DP activities within the Daimler-Benz group. Debis Systemhaus is a subsidiary of Debis (Daimler-Benz Interservices) and is one of a group of five services companies, some of which operate worldwide. Twenty percent of its DM 0.8 billion revenues in 1990 came from the open German market, and 80% from within its parent Daimler-Benz.

Debis Systemhaus operates within five business areas:

- Computer/Communication Services
- Business Systems and Projects
- Industrial Systems and Projects
- GEI Systemhaus
- Training and Consultancy

Each of these is expanded below:

- Computer/Communication Services (1,200 staff)
    - 50 regional DP centres operated primarily for the Daimler Benz group
    - Germany's largest computer network
    - Computer centre backup services
    - Systems integration
    - Hardware services

- Business Systems and Projects (1,000 staff)

  Custom and standard solutions for:

  - Finance/lease sector
  - Personnel and financial systems
  - Sales consulting, fleet planning, and spare part disposition
  - Tax consultants and accountants
  - Garages and sales companies
  - Logistics, distribution, and transportation companies

- Industrial Systems and Projects (800 staff)

  - Strategic IT consulting
  - Engineering and CAD systems
  - Other manufacturing and support systems
  - Value-added networks

- GEI Systemhaus (800 staff)

  Established professional services group offering software tools with specialities including IT security. The group is best known for handling very large projects for:

  - Manufacturing automation
  - Telecommunications, airports and government

- Training and Consulting (180 staff)

Recent acquisitions by Debis include the Diebold Group (IT skills training), Orga-soft (logistics) and Systemhaus Curadata (tax accountant software). The partnership with CGS gives the Debis acquisition programme a major boost and instantly expands opportunities outside the Daimler-Benz organisation. Debis can be expected to continue its policy of expansion through acquisition.

Further analysis of software and services trends in the European market are provided in INPUT's European Software and Services Market Analysis Programme.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Subscription services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services. INPUT specialises in the software and services industry which includes software products, systems operations, processing services, network services, systems integration, professional services, turnkey systems, and customer services. Particular areas of expertise include CASE analysis, information systems planning, and outsourcing.

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialisation. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
24, avenue du Recteur Poincaré
75016 Paris, France
Tel. (33-1) 46 47 65 65 Fax (33-1) 46 47 69 50

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

August 1991
MAPE Vol. II, No. 12

Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

Third-Party Software Support and Maintenance—User Profiles

Exhibit 1

User Case Study
Government Sector—Scenario

- IS Objective
  - Improve user service/lower costs of economic model
- Old Age Problems
  - Plan to replace suit of applications
  - Some software 20 years old
  - Many change requests still
  - Obsolete systems hardware/software
  - Boring for staff, poorly documented
  - High-security site

Source: INPUT

Exhibits 1 and 2 summarise the experience of a Government department in a European country of contracting out the maintenance and support of a very old database application originally developed in-house and used for assessing the economic impact of EEC and local policy changes on a national industry.

The objective of contracting out to a third party was to improve the service received by the end user and to lower the costs of running the service. Some applications are over 20 years old, and although the number of code changes is small, end users are continually requesting changes to the application parameters and database fields.

To add to the difficulties of keeping the end users satisfied, the applications run on an old mainframe using an obsolete operating system. The support staff were poorly motivated and eager to acquire a replacement system. The site and the application are subject to high security regulations.

Three vendors were invited to tender. The solution adopted after careful analysis by the vendors called for a hand-over period of three months, during which one or two of the eight staff remained available to train the vendor's employees.

The final terms of the service called for a fixed price for an agreed level of support service, plus a time-and-materials portion for responses to end-user special requests.

Exhibit 2

User Case Study
Government Sector—Outsourcing

- Solution—Outsourcing
  - 3rd-party staff working on-site
  - Mix of time-and-materials and fixed-price
  - 3 months parallel working hand-over
  - Users interface directly with vendor
- Benefits
  - >50% cost saving on staff ~$70K p.a.
  - 8 full-time staff replaced by 4 part-time
  - System life extended 5 years
  - Vendor handles all staffing

Source: INPUT

The most interesting aspect of this example is the way the IS department passed full responsibility to the service vendor who now deals directly with the end-user department on all issues.

The potential cost of any change is now visible to end-user management in the form of costed quotations. This has improved end-user decision making about the cost effectiveness of changes being requested.

The exercise has been very successful, freeing eight IS staff for use on other projects, reducing the overall workload and dramatically improving the reliability of the system. This has enabled the replacement plans to be put off, freeing the budget for other uses.

The improvements in reliability are a spin-off from the vendor's strong management methods applied to the whole applications software environment. Far less time is now spent analysing and fixing problems (down to only 5%), or re-inventing solutions to problems which have occurred before. This has allowed the vendor to negotiate a lower-cost service level which still satisfies the end users' needs.

The second case study is outlined in Exhibits 3 and 4. It concerns a large IS group within a telecommunications PTT, where there is tremendous pressure for new applications that reflect a more customer-oriented business stance. Freeing up IS staff with valuable business knowledge was the main objective of considering outsourcing some support and maintenance activities.

Exhibit 3

User Case Study
Telecommunications Sector—Scenario

- IS Objective
  - Free up staff and improve user service in materials management
- Problems
  - Demand for new business systems
  - Database growing out of hand
  - 5-year history of fast fixes to software
  - Bad system response times
  - 23 people—fire-fighting support

Source: INPUT

Exhibit 4

User Case Study
Telecommunications Sector—Outsourcing

- Solution—Outsourcing
  - 3rd party took prime responsibility
  - Mix of in-house and 3rd-party staffing
  - 6 months for knowledge transfer
  - Client's quality system
  - Planned reviews under client's direction
- Benefits
  - 19 staff released for new projects
  - Users happy—good response times
  - Call-outs reduced ten fold
  - System reliability and life extended
  - Working practices adopted by client

Source: INPUT

The application chosen was a major inventory and warehouse management system implemented at several locations for a regionally organised end-user management.

The five-year-old system had been treated like most heavily used applications—speedy fixing of problems had taken precedence over elegant solutions. So short-cuts had been taken, resulting eventually in some response times, at peak hours, being totally out of hand.

With 23 people employed in supporting the applications, it seemed an excellent test case on which to judge the promises of the service vendor.

In this case the knowledge transfer required to release 19 of the in-house support and development staff took six months. There was also considerable spin-off in knowledge transfer to the computer operations staff, as the vendor applied improved working practices to establish a stable and reliable software environment.

The vendor established procedures for configuration control, software testing and release, which conformed to the users' own internal quality procedures and standards. In fact, considerable energy was put into establishing a tight teamwork approach with shared office space and good communications at all working levels.

The results were exceptionally good, with response times down to a level at which it is going to be hard to find an adequate replacement system in the future. There is no doubt that the system's life has been extended by proactive management in place of the previous reactive, fire-fighting response.

The original high level of end-user complaint has given way to silent satisfaction, and the original 24-hour emergency service level has been reduced to a normal working-hours service.

Many of the new working practices introduced by the vendor have been adopted by the IS client management.

The professional services industry has traditionally lived by helping clients to tackle *new* projects. As the installed base of software systems has grown, so has the challenge for IS departments of maintaining the vast array of increasingly complex systems. Consequently the opportunity has arisen for the professional services business to address the opportunities related to software maintenance.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
24, avenue du Recteur Poincaré
75016 Paris, France
Tel. (33-1) 46 47 65 65 Fax (33-1) 46 47 69 50

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

August 1991
MEMAP Vol. II, No. 13

Route to:

INPUT®
Research
Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

CA90s and ENTIRE—New Systems Software Architectures

To provide some insights into the different marketing strategies that independent systems software vendors are adopting, this bulletin discusses the marketing assumptions behind the recently announced product architectures of two of the leading vendors:

- CA90s from Computer Associates
- ENTIRE from Software AG

The Architectures

CA90s from Computer Associates

CA90s is defined by Computer Associates as "a software architecture for the 90s that is hardware independent" and is intended to achieve two publicly stated objectives:

- The public disclosure of the company's development methodology

- The provision of a unifying computer architecture to which future software developments will conform

Exhibit 1 shows the basic layers of the architecture.

Exhibit 1

CA90s—The Architecture

User Interface Services
Software Solutions
Integration Services
Distributed Processing
Platforms

Source: INPUT

The principal objectives of the architecture are as follows:

- To provide portability across hardware and operating systems platforms

- To provide a methodology that provides a standard development environment from the systems software level to the user interface level

The fundamental assumption upon which CA90s is based is that users are demanding an architecture to facilitate downsizing from mainframes to the following major platforms:

- VAX
- AS/400
- Workstations

The expectation within Computer Associates is that users are seeking solutions that allow them to migrate existing software applications to smaller machines. The company does not consider that there is a significant demand for the large-scale integration of software applications running on a variety of co-existing platforms.

However, Computer Associates intends to develop transparent integration packages between specific system software environments in response to particular pockets of demand. Examples include the intention to provide a link between DB2 and Datacom.

ENTIRE from Software AG

The ENTIRE function server technology is a client/server solution designed to span multiple platforms, allowing the transition from a mainframe-based environment to one that encompasses the following technologies:

- Mainframes
- UNIX
- OS/2

The principal goals of ENTIRE are summarised in Exhibit 2.

The concept of the ENTIRE function server technology is illustrated in Exhibit 3 and is summarised below:

- The connection of clients and servers from a variety of different platforms
- To share functions and resources across platforms
- To provide compatible functions across platforms

The ENTIRE technology has been launched in response to demand that Software AG has detected for the concept of "interoperability"—the ability to use standard interfaces to permit communication and data sharing across different types of systems. Interoperability is based on the premise that there is a need to protect the large-scale investment already made; this implies that the principal requirement for downsizing is to support a multisystem environment within which users can evolve towards the new technologies.

The Points of Comparison

Although the approaches adopted by both companies accept the growth of downsizing, client/server technologies and open systems, a number of fundamental distinctions exist among the assumptions underpinning the two concepts.

Computer Associates has identified the key issues as follows:

- The ease of portability of existing applications across hardware/operating system platforms to facilitate the migration from the mainframe environment to new technologies

Exhibit 2

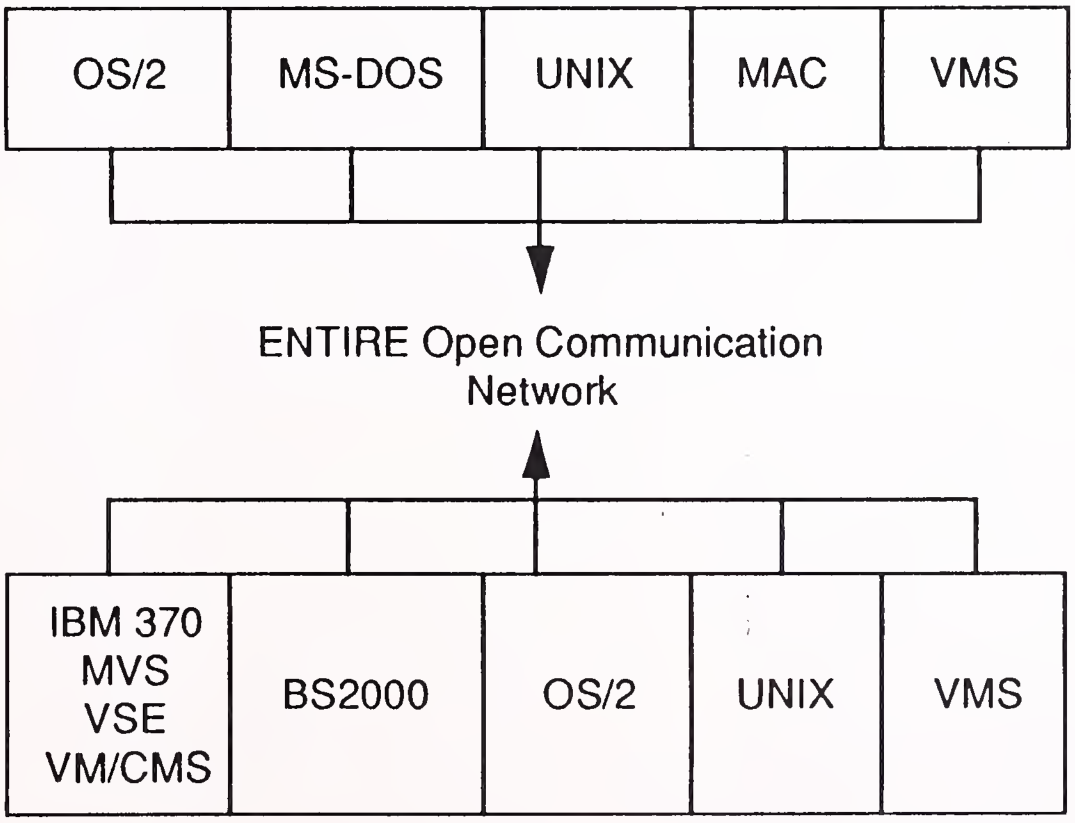
The Goals of the ENTIRE Function Server

- To make different service functions look as similar as possible
- To make services accessible using standard SQL commands wherever possible
- To present server functions in an object-oriented fashion for easier understanding, reusability and consistent message-based communication
- To establish a consistent logical protocol for communicating requests among clients, agents and servers

Source: Software AG

Exhibit 3

The ENTIRE Function Server—The Concept



Source: Software AG

- The provision of a development environment linking the systems software environment to the application and user interface layers of the Computer Associates model

However, Software AG considers the major issues to be:

- The need for users to protect existing high levels of investment in computer technology.
- The need to provide the technology to share resources from the systems software layer to the applications layer across a wide range of platforms

The considerable variation in strategy adopted by the two companies indicates a widely differing view of the market. Computer Associates views the principal market requirement as the ability to move applications across platforms. This in turn is regarded as an opportunity to protect its existing customer base by offering increased portability of product.

Software AG has concluded that the market will move at a significantly slower pace than that predicted by Computer Associates. By supporting an evolutionary approach to change, Software AG is assuming that the principal factor affecting market development will be the need to protect existing investment rather than simply existing applications.

Comments

The relative success of either of these two approaches is critically dependent upon two factors:

- The degree to which the supplier or the buyer holds the power to influence the market
- The readiness of the market to respond to the market-led approach rather than the product-led approach.

The implicit assumption made by Software AG is that the user will increasingly dictate the rate at which the market evolves towards the new technologies. Software AG sees the key factor as being the need to benefit from existing investment rather than rapid migration towards new technologies.

Although Computer Associates accepts the importance of protecting the users investment in existing applications, the company sees the major source of demand coming from customer's desire to migrate rapidly towards the new technologies. Such a scenario assumes that technological advance is the principal factor driving the market and that the benefits to be gained from migration to new equipment platforms are sufficiently attractive to warrant the additional investment required.

The fact that two of the major independent vendors in the systems software business have adopted such very different strategies illustrates the uncertainty that exists within the market. It is too early to predict which approach will gain a dominant share, but the variation of approaches indicates that the systems software market is currently in flux.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

September 1991
MEMAP Vol. II, No. 14

INPUT®
Research
Bulletin

Route to:

A Publication from INPUT's Market Analysis Programme—Europe

LIBRARY

CAP GEMINI Selects Insurance Market for Growth

Europe's leading independent information systems vendor, the CAP Gemini Sogeti Group (CGS), has singled-out five industry sectors for development across national boundaries. In addition to the insurance sector, CGS has selected the banking and finance, oil and chemicals, air transport, and manufacturing industries for further international penetration. These sectors have been identified as offering good growth potential.

Building on its existing capabilities and its client base across Europe, and elsewhere, CGS has established an International Support operation in Paris, with the objective of exploiting its strengths and expertise internationally.

CGS's insurance sector activities in Europe currently represent some five to six percent of revenues. The company has substantial insurance sector business in most north European countries, especially in France and the U.K.. Its mission is to increase penetration in those countries in which it still does not have a large share, growing rapidly over the next few years until insurance represents perhaps eight percent of overall software and service revenues.

CGS provides integrated information system solutions to business problems, and does not generally favour particular software application products. It prefers to offer clients the most appropriate integrated solution to their particular need, keeping the freedom to pick the best available products to integrate.

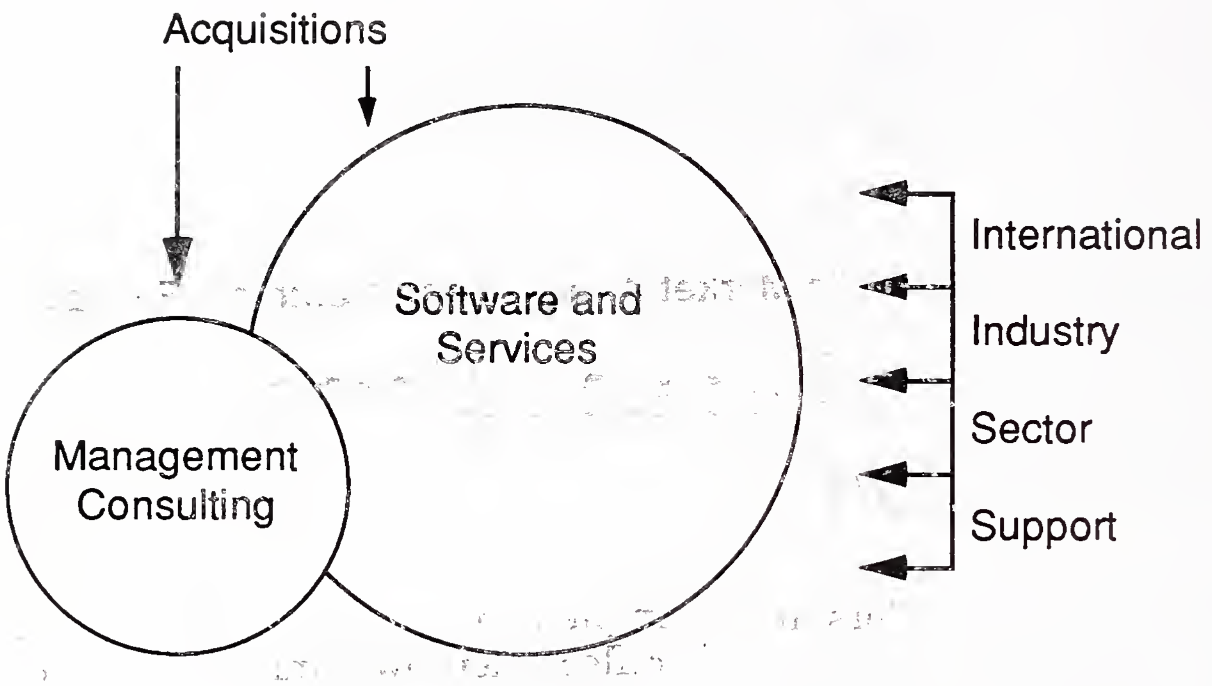
Management Consulting

CGS's parent company, Sogeti, has been very active in the past two years acquiring management consultancy companies. INPUT's research in this area suggests that management consultants are highly influential in their clients' choice of IS solutions. In addition, large consultancies have been building their own ability to deliver IS solutions. In the process, they have been winning market share from the established software and services vendors in Europe and generally growing at well above the rate of the overall software market.

INPUT's understanding of CGS's business development strategy is illustrated in Exhibit 1. The circles represent the two markets of management consulting and software services targeted for acquisition, with the smaller eating into the larger as consultants diversify into IS. CGS has been implementing an acquisition strategy for both markets and has now added an international (vertical) industry sector

Exhibit 1

Cap Gemini Sogeti Strategies



strategy in order to build its worldwide capability.

CGS is expecting synergy to grow between its acquired management consultancies and its software companies, with local cooperation occurring as the need arises. The CAP Gemini International Support group is expected to provide further impetus to this direction by adding international marketing and distribution of the company's capabilities—in its chosen markets.

The Challenge in Insurance

The insurance sector suffers more than most from the millstone of software maintenance. Huge mainframe applications have grown up over the years on which the insurance company is typically highly dependent. Changes in the industry—particularly the concern to address the profile of each customer rather than accounting for policy numbers—are generating an urgent demand for new, more flexible applications. But few clients can release their knowledgeable staff to work on these projects. They are all consumed with maintenance of existing systems.

Hoskyns (a subsidiary of CGS in the U.K.) and Prudential are working together on an innovative approach to reduce the software maintenance work load and free staff to work on new applications. CGS is also working closely with several major insurance clients to define an IS architecture suitable for each business in the 1990s. This initiative complements some of IBM's IAA (Insurance Application Architecture) work.

Further analysis of software and services trends in the insurance market will be provided in the INPUT report—*European Software and Services Market, Insurance, 1991-1996.*

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

September 1991
MEMAP Vol. II, No. 15

Route to:

INPUT LIBRARY

INPUT®
Research
Bulletin

A Publication from INPUT's Market Analysis Programme—Europe

IBM's IAA Fosters Mix and Match Insurance Solutions

Leading software and services vendors in the European insurance sector are embracing IBM's development of an Insurance Application Architecture (IAA) for future systems. IBM sees a clear demand emerging among its customers for mixing and matching applications from different sources.

The sheer bulk of information needed to support insurance business operations has always favoured the use of databases on large mainframes. Many insurance companies suffer from having built monolithic applications over a period of 10 to 20 years. In a time of international expansion, these software systems are often unsuitable for porting to new business locations.

The difficult task facing many insurance companies is how to update their applications and migrate smoothly away from the software they have depended upon for so long. Migration is the key to future success and needs to be carefully defined case by case.

A second challenge is to provide the flexibility of applications software products that will allow insurance companies to implement and integrate systems that reflect their own unique operations and support their own competitive edge.

The idea that all today's applications can be integrated together has become too expensive and risky to implement. Development costs must be lowered. Applications software products need to be very rich in function but at the same time readily tailored to individual needs.

The new world promised by IBM with IAA is very attractive because it aims to create an environment in which both these tasks—migration and integration—become easier to manage:

- IBM is investing in its ability to help customers manage the transition problem by establishing standards with IAA and by creating centres of excellence in the professional services that are required to exploit such an architecture—staff with the rare mix of skills necessary to act as insurance system architects.

- IAA seems to be much more than SAA 'dressed up' for the insurance sector. The application architecture is largely platform independent, which applies to both the data model and the function model. For example, some clients are considering UNIX implementations of IAA, though this is not seen as a general trend among insurance companies.

- If companies comply with interface standards, then it should be feasible (and highly desirable) to break down application systems into smaller, more manageable projects. With systems requirements becoming ever larger and more complex, the concept of fragmenting large application systems into smaller application modules (a rather different form of application downsizing) appears to be very attractive.

The quality of service an insurance company can offer its clients is directly related to its investment in good quality information systems. IAA is intended to provide a solid foundation for such systems in the future, with a feasible migration path from today's systems.

The leading pan-European vendors, including PMSC, Paxus and Continuum, all see IAA as a catalyst for business growth and a base for new product developments. IBM has a stake in several of the leading vendors and is relying on them to provide the applications customers need in a way that will meet the demand for mixing and matching software from different sources.

IBM is not investing directly to produce insurance application products itself, but is investing in providing its clients with:

- A manageable system development path within an architectural framework
- The supporting professional services with which to map out the path, and if necessary, manage its implementation with a systems integration contract
- A choice of national and international applications from which to mix and match unique solutions

Key to IBM's success will be its ability to cooperate fully with its chosen partners, helping to implement solutions for the profit of customers and vendors.

Further analysis of software and services trends in the insurance market will be provided in INPUT's report, *European Software and Services Market—Insurance, 1991-1996*.

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

October 1991
MEMAP Vol. II, No. 16
Route to:

INPUT® Research Bulletin

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme—Europe

The Role of Applications Software Products in the Banking Industry

The Banking Sector in Europe

Europe is not immune to the crisis now being experienced by the banking sector worldwide:

- International banks are merging to improve their ability to survive the serious market conditions engendered by the recession, which has been longer and deeper than originally predicted. The merger of Manufacturers Hanover and Chemical Bank is the most notable.
- Banks are going into administration and receivership. Two well-publicised examples are the following:
  - The merchant banking arm of the British & Commonwealth Group in the U.K.
  - The Bank of Credit and Commerce International (BCCI), which has its headquarters in Luxembourg but is essentially an international bank
- The major banks in Europe, such as the National Westminster in the U.K., are continuing to report lower profits and/or difficult trading conditions.

At the same time, a number of earlier business initiatives are still being implemented. Particularly in countries such as Italy and Spain, the banks are striving to update their methods of doing business and are streamlining their organisations to meet the challenges posed by the creation of the Single European market in 1993.

Therefore a paradoxical situation exists in the banking industry:

- On one hand, banks are implementing new systems to handle new types of business and are even undergoing further diversification into insurance, securities and other trading markets.
- On the other hand, some banks are instituting serious reviews of all aspects and levels of their businesses. These reviews are leading to calls for retrenchment on core activities and a pause on capital spending for innovative projects.

Information Systems and Services for Banks

The tenuous situation in the banking industry has its analogue in the information systems and information services markets, where in some ways it is more of a strategic crisis and is causing considerable restructuring. This restructuring is evidenced most recently by Digital Equipment's acquisition of Philips Information Systems. Also, DEBIS—the Daimler Benz group information services company—purchased an equity stake in CAP Gemini, thereby strengthening CAP Gemini's share structure.

Exhibit 1 lists some of the major issues currently affecting banking and banking systems.

Exhibit 1

Key Issues and Trends in the Western European Banking and Finance Sector

- The world banking crisis
- Retrenchment vs. diversification
- IS spending pause
- Mergers in banks
- Consolidation in the IS sector
- Outsourcing

Source: INPUT

In spite of these current difficulties, INPUT is forecasting considerable continuing growth in the applications software products segment for banking and finance systems:

- There is increasing user interest in the role of software products in countries where customised software solutions were or are the norm.
- The need to provide timely software solutions within budget is leading vendors to offer products as tailored solutions resulting from projects previously undertaken.

Exhibit 2 gives INPUT's five-year forecast for applications software products in this sector across Western Europe.

Strategic Challenges for IS Vendors

The short- to medium-term challenges for IS vendors will relate differently to user requirements in each country market. These requirements are subject to the contradictory influences of:

- Recessionary retrenchment
- Upgrading to meet competitive pressures

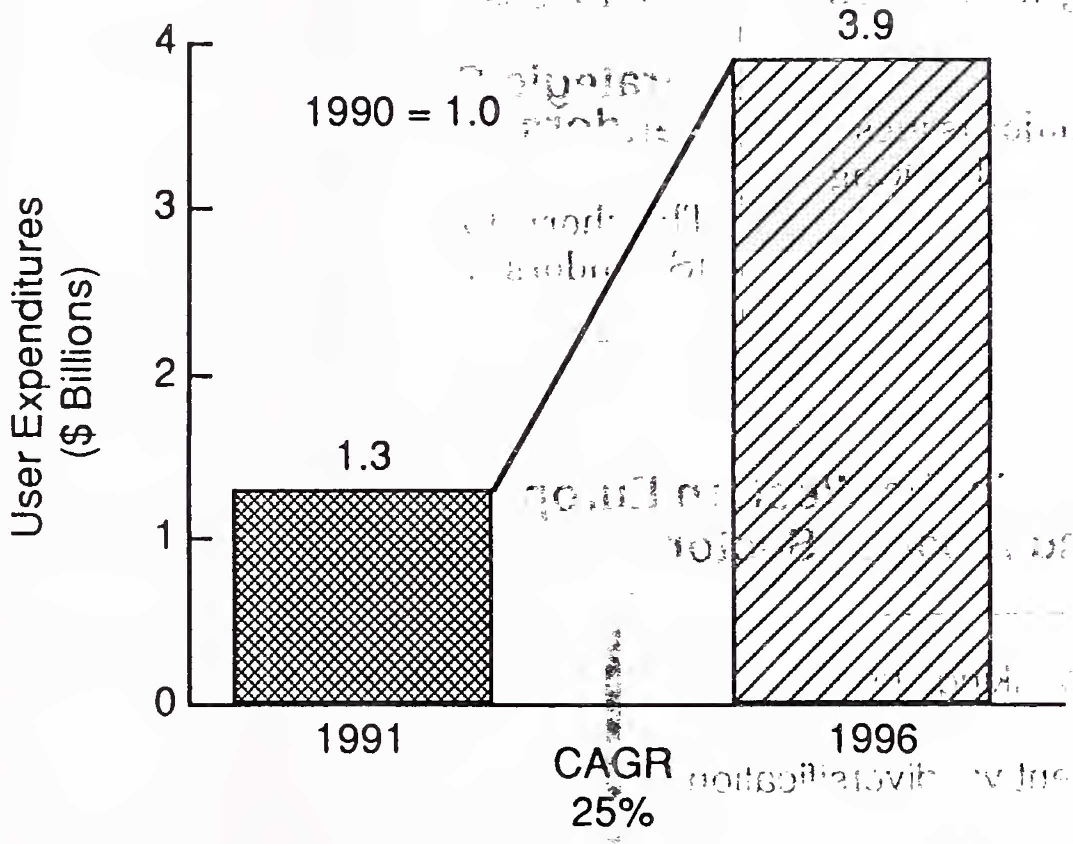
Which of these two opposing forces dominates varies according to the maturity of the sector in each country:

- More mature countries, such as the U.K. and France, are leaning towards the more cautious retrenchment policies.
- Less mature countries, such as Italy and Spain, need to catch up with their more mature rivals to survive.

Banking systems have been traditionally based on the customer account as the unit of service product. Banks know they need to re-orientate their thinking towards a total customer service approach. Many financial services institutions, as well as

Exhibit 2

Banking and Finance—Western Europe Applications Software Products, 1991-1996



Source: INPUT

the banks, have already started to redevelop their systems with this in mind. This is a totally nontrivial exercise for the major companies, as it involves:

- Planning for flexibility in developing future services around the new customer databases
- Running the existing systems and organisational units until the new systems are implemented

This redevelopment is a major opportunity for services vendors, but what role software products will have, and how application development tools will be used to speed the process, are both key issues:

- Application products, although providing speedy implementation, can lack the necessary flexibility for the new generation of systems, if not well selected.
- Customisation of products, if feasible, can increase the competitive edge a system creates by making this system more applicable to an individual organisation's requirements—i.e., customization can make a system less of a generic commodity. But customisation can be costly and can lead to some of the problems associated with tailored solutions.
- Application development using CASE tools offers the user the potential for creating an optimum solution using the in-house resources of IS professionals.
- The complexity of the decisions involved is inducing some users to examine the option of outsourcing major applications or a portion of their infrastructures to be able to control costs and project time scales and to concentrate on applications requirements.

The key activity for IS vendors at present is to offer a flexible but well-defined set of service lines from which to "mix and match" the right solution in each special case. Exhibit 3 summarises the important challenges facing vendors.

Exhibit 3

IS Vendor Challenges

- Banks require customer orientation
- The service line mix
- Role and weaknesses of products
- The outsourcing option
- Application development tools and the "repatriation" of discrete services

Source: INPUT

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Market Analysis Programme—Europe. If you have questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT,
Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, England.
Tel. (071) 493 9335, Fax (071) 629 0179

May 1992
ME-MAP Vol. III, No. 7

INPUT®
Research
Bulletin

Route to:

INPUT LIBRARY

A Publication from INPUT's Market Analysis Programme Europe

Software and Services Market Shares - Competition Increases

Over the last few years the equipment vendors have been pushing software and services business hard to recover lost hardware margins, to retain control of major accounts and to counter stagnant maintenance revenues. What effect is this having on the market in Europe?

This bulletin identifies the changes in competitor mix which have occurred over the last decade and reports on the progress each type of vendor has made in terms of overall market share. The traditional professional services vendors are coming under increasing pressure from newer market entrants.

Bright prospects for the software and services market in Europe continues to attract competitors from other business sectors. Telecommunications vendors, equipment distributors, third party maintainers, and network service vendors have all achieved visible market shares over the past decade. Most impressive has been the progress made by management consultancies as they have broadened their portfolio further and further into IT-related services.

Exhibit 1 shows the spread of types of vendor who all plan to take an even larger share of the European information services market. The total information services market of $100 billion includes software and all types of service in Europe.

Exhibit 1

Market Share Ranking by Vendor Type

Rank	Vendor's Primary Business
1	Professional Services
2	Equipment Vendors
3	Software Products
4	Management Consultancies
5	Processing Services
6	Independent Maintenance
7	Network Services
8	Telecommunications

Note: Includes equipment service revenues

The diversification of equipment maintenance vendors into other types of service has resulted in INPUT now including equipment services within its overall market definition (this will be detailed in a future bulletin). The Information Services Industry therefore now covers:

- Processing Services - such as computer bureaux
- Turnkey Systems - complete system packages
- Applications Software Products
- System Software Products - including development tools
- Equipment Services - installation and maintenance
- Professional Services - custom projects and training
- Network Services - information and applications
- Systems Operations - outsourced computer operations
- Systems Integration - multi-faceted projects

The following paragraphs single out some key characteristics of the important vendor groups serving these delivery mode sectors.

Management Consultants

Perhaps the most important change in the shape of the Europen market has been the rise of the management consultants. Their IT-related business has grown around 20 times since 1980, giving them a 7% market share by 1991. This sector continues to grow as a threat to the traditional vendors, some of whom have attempted to expand into management consulting themselves, but with little success for those who have tried to do it organically.

Equipment Vendors

The emphasis being placed by equipment vendors on their software and services offerings is well publicised. Over the last ten years they have typically increased such revenues tenfold while the market has grown by a factor of eight. This apparent increase in market penetration however seems to have resulted in some cases from the un-bundling of software and services from equipment charges. So although it has contributed to market growth, it may have been for software or services for which there were few or no real alternative sources.

The equipment maintenance market has only experienced modest growth in the last decade (14% in 1980 falling to near zero today). So despite improving their software and service position the equipment vendors' overall market share has fallen, as shown in Exhibit 2 which compares 1980 and 1991 positions. As a group the equipment vendors have not performed as well as perhaps expected. Subsequent bulletins will look at the relative strengths of some of the leading vendors and their switch to software and services.

Excluding equipment maintenance activities reduces the information services market from $100 billion to $77 billion and the equipment vendors' share falls from 35% to 18%. Professional services vendors then account for half the total market.

Exhibit 2

Comparative Market Shares by Type of Vendor Information Services, Europe

Vendor's Primary Business	1980 Market Share (Percent)	1991 Market Share (Percent)
Telecommunications	-	1
Software Products	9	13
Professional Services	18	38
Processing Services	31	3
Network Services	-	1
Equipment Vendor	39	35
Independent Maintenance	-	2
Product Distributor	-	1
Management Consultancy	3	7
Total (Rounded)	100	100

Telecommunications Vendors

In the 1980s the British, German and French PTTs set their sights on a share of the computer software and services market in response to deregulation and the threat of competition especially from AT&T. Although all of them have large in-house IT capabilities their impact in the open market has been minimal to date - around a 1% market share overall. It seems likely that in future they will concentrate on extending their networking capabilities from public to private networks, rather than competing outright for computer systems business.

IT Distributors

As third-party distribution finds wider and wider favour with the major product vendors, so the opportunity arises for distributors to offer added-value services and to establish the primary sales channels for software products. INPUT expects their market share to grow significantly from the 1991 estimate of 1%.

Professional Services Vendors

This is the largest group and the most fragmented, comprising most of the traditional vendors- some 9,000 vendors operating in Europe with over $100,000 turnover. They have prospered over the decade but, with real market growth falling below 10% in Europe, they will have to have very clear market focus and strong management to hold off threats from the other vendors in the 1990s.

Further analysis of software and services trends is provided in the INPUT research programmes - *European Information Services Industry (Software and Services), 1992-1997 / European Outsourcing Services, 1992-1997 / and European Customer Services Markets, 1992-1997.*

This Research Bulletin is issued as part of INPUT's Information Services Programme - Europe. If you have any questions or comments on this bulletin or wish to purchase related reports, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, U.K.
Tel. (071) 493 9335, Fax (071) 629 0179

About INPUT

INPUT is a worldwide consulting and market research firm uniquely focused on the information technology services and software markets. Executives in many technically advanced companies in Europe, North America, and Japan rely on INPUT for data, objective analysis, and insightful opinions to support their business plans, market assessments, and technology directions. By leveraging INPUT's considerable knowledge and expertise, clients make informed decisions more quickly, and benefit by saving on the cost of internal research.

Since 1974, INPUT has compiled the most extensive research base available on the worldwide information services market and its key segments, providing detailed market forecasts, vertical industry sector analysis and forecasts and analysis of vendor strategies and products. INPUT delivers specific expertise in the fast changing areas of outsourcing, systems integration, EDI/electronic commerce, software development/CASE, and on the impact of downsizing.

Consulting services are provided by more than 50 professionals in major international business centers. Clients retain INPUT for custom consulting/proprietary research, subscription-based continuous advisory programs, merger/acquisition analysis and user satisfaction surveys.

Most clients have retained INPUT continuously for a number of years, providing testimony to INPUT's consistent delivery of high-value solutions to complex business problems. To find out how your company can leverage INPUT's market knowledge and experience to gain a competitive edge, call us today.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C. - INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London - INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris - INPUT SARL
24, avenue du Recteur Poincaré
75016 Paris, France
Tel. (1) 46 47 65 65 Fax (1) 46 47 69 50

Frankfurt - INPUT LTD.
Sudetenstrasse 9
W-6306 Langgöns-Niederkleen, Germany
Tel. 0 6447-7229 Fax 0 6447-7327

Tokyo - INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

May 1992
ME-MAP Vol. III, No. 8

Route to:

INPUT®
Research Bulletin

A Publication from INPUT's Market Analysis Programme Europe

Software and Service Vendors Benefit from German Unification

Investment in IT infrastructure for the new German states, formerly known as East Germany, created substantial growth opportunities during 1991 for vendors. INPUT estimates that this new business added some 8% to the software and services market size overall in Germany. This compensated for growth rates which were one or two percent lower than predicted last year.

Exhibit 1 lists the top twenty vendors in the German market during 1991. It is compiled using only the software and services revenues attributable to the domestic market within Germany excluding exports and excluding revenues from within any parent group companies.

As in nearly every European country, IBM leads in software and services revenues. However, in Germany, it is matched by Siemens-Nixdorf Informationsysteme (SNI) which was formally constituted on October lst 1990 following Siemens earlier acquisition of a majority stake in Nixdorf Computer AG. Both vendors generated significant revenues from the newly merged eastern regions of Germany, particularly in the public administration sector (regional and local government).

For many years Nixdorf was an extremely successful vendor of turnkey systems based on its proprietary minicomputers and COMET software. However the company made heavy losses in 1989 and 1990 as open systems made inroads into this traditional client base, and the company became increasingly dependent on its sales of point-of-sale systems to the financial and retail sectors. SNI made a further substantial loss in 1991, but expects to halve this in 1992 and break-even in 1993. The turnkey systems market remains a difficult one and another of Germany's leading turnkey systems vendors - Mannesmann Kienzle - was also recently acquired, on this occasion by Digital.

Datev the third largest software and services vendor in Germany, is a co-operative owned by German accountants and tax specialists, which provides software products and processing services to support specialists in these fields.

SAP is a uniquely successful European vendor. It has established itself during the 1980s as the largest and fastest growing European application software products vendor. It dominates the market for accounting and production management applications based on mainframe architectures in Germany.

However, the company has also recognised the changes taking place in its marketplace, particularly the moves to downsizing and open systems, and has modified its strategy and product development programme accordingly. A new product, R/3, based on UNIX-based equipment and initially aimed at medium-sized organisations will be launched on lst January 1992. The German market remains a difficult one for foreign software products companies to penetrate. While this is particularly true for commercial applications software products, vendors of technical products such as the CAD vendors Intergraph and Prime have met with greater success. Germany with its manufacturing strength remains the largest national market for Intergraph across Europe.

Exhibit 1

Leading Vendor Market Shares Software and Services Germany, 1991

Vendor	Country of Origin	Estimated Sector Market Share (Percent)
IBM	U.S.	8.6
Siemens-Nixdorf	Germany	8.6
Digital	U.S.	3.8
Datev	Germany	2.9
Reuters	U.K.	2.3
SAP	Germany	1.7
Microsoft	U.S.	1.6
Prime	U.S.	1.2
Compunet Computer	Germany	1.0
Computer Associates	U.S.	1.0
Software AG	Germany	1.0
Fiducia	Germany	0.9
Ploenzke-Gruppe	Germany	0.9
Taylorix	Germany	0.8
Cap Gemini Sogeti	France	0.8
Intergraph	Netherlands	0.8
debis Systemhaus	Germany	0.8
Unisys	U.S.	0.7
Bull	France	0.7
Alldata	Germany	0.6
Softlab	Germany	0.5

Software AG is the only European software product vendor to appear in the top thirty leading vendors in Europe with an established global market presence. Originally best known for its mainframe ADABAS database products, recent product launches have positioned it to carry forward a worldwide user base into the realms of client-server and open systems computing.

Cap Gemini Sogeti has strengthened its position in Germany over the last year with its acquisition of SCS from SD-Scicon and via its relationship with Daimler Benz. Daimler Benz's own subsidiary debis Systemhaus has now combined with Cap Gemini Sogeti in a joint venture to take an increasingly aggressive stance towards the software and services market in Germany. This joint venture took effect in 1992 so the list still shows both companies.

The change of ownership for debis Systemhaus means that Daimler Benz is no longer the majority shareholder. In 1991 nearly 80% of debis Systemhaus revenues were counted as captive revenues by INPUT. The new ownership means all revenues are now counted in our market sizing. Back-dated, the result would have been a third place market share of nearly 6% for debis Systemhause with its three subsidiaries - debis Systemshaus CCS (Computer-Communication-Services), CAP debis Software und Systemme, and Diebold.

Further analysis of software and services trends is provided in the INPUT research programmes - *European Information Services Industry (Software and Services), 1992-1997 / European Outsourcing Services, 1992-1997 / and European Customer Services Markets, 1992-1997.*

This Research Bulletin is an excerpt from a full research report issued as part of INPUT's Information Services Programme - Europe. If you have any questions or comments on this bulletin or wish to purchase the report, please contact Peter Lines at INPUT, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, U.K.
Tel. (071) 493 9335, Fax (071) 629 0179

SEE 1992

SEPARATE BINDER

FOR MAP